MANCHESTER of TO-DAY

BY C. W. SUTTON M. A.

WITH ILLUSTRATIONS

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PREFACE.

This Handbook was originally prepared for presentation to Members of the British Medical Association in 1902, and it is by the courtesy of the editor, J. Howson Ray, Esq., F.R.C.S., that we are enabled to reproduce the volume, with such emendations as seemed necessary. The work was subdivided, as Mr. Ray remarked, amongst many writers who—resident in the district, and having a first-hand and often a special knowledge—were selected as peculiarly well fitted to sketch out the salient features of the city and its neighbourhood. Several of the writers who gave their valuable services on the former occasion have passed away, but those who remain have most kindly revised their contributions, and the volume has been edited afresh by Mr. C. W. Sutton, M.A., to whom and to the following gentlemen, W. E. A. Axon, Esq., Professor W. Boyd Dawkins, F.R.S., Dr. Niven, Dr. Tattersall, Thomas Hudson, Esq., Alderman Birkbeck, Alderman Ward, C. H. Wyatt, Esq., M.A., J. L. Paton, Esq., M.A., Dr. Joseph Hall, Miss Burstall, J. H. Reynolds, Esq., M.Sc., O. Duthie, Esq., B.A., Edward Fiddes, Esq., M.A., J. E. Phythian, Esq., Walter Speakman, Esq., W. Blackstock, Esq., F. A. Eyre, Esq., and the Rev. H. A. Hudson, M.A., we wish to accord our heartiest thanks for their services in the recasting of the volume and for the loan of photographs and blocks for the purposes of reproduction. Our special thanks are due to Mr. Ray for his courtesy in allowing us to make use of his excellent compilation, and to Messrs. Sherratt & Hughes, for their valuable services in promoting the publication of the volume which, we hope, will be of material assistance to the Members of the Conference on the occasion of their visit to our city.

WILLIAM LANE,

Chairman of the Publishing Committee.

WILLIAM KIRKBY,

Hon. Secretary.

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CHAPTER I.

HISTORY AND ANTIQUITIES.

By CHARLES W. SUTTON, M.A.,

Chief Librarian, City of Manchester.

Dr. John Whitaker, in his "History of Manchester," published in 1771, painted an able but fanciful picture of Manchester as he conjectured it to have been before the coming of the Romans, showing us the huts, streets, and people of the British town, planted in the midst of a country abounding with woods, cloughs and morasses. "Half a century before Christ" is the period he gives for the formation of the "first faint outlines of the present Manchester." It may have been; but Whitaker reasoned almost wholly from analogy, and he had few tangible materials to work upon. He discovered certain foundations of "hovels for British cattle" and stone steps of British construction on the north bank of the Medlock. Funeral urns and a few pre-historic implements have also been found, and from these it has been shown by Dr. Boyd Dawkins that Manchester and its neighbourhood must have had their inhabitants long before the date given by Whitaker.

The Romans came upon the scene between 48 and 79 A.D. Mr. Charles Roeder, in an exhaustive contribution to the *Transactions of the Lancashire and Cheshire Antiquarian Society* for 1899, has registered the whole of the available evidence concerning the Roman occupation of Manchester, which continued for about three hundred and

fifty years. In this valuable paper he has recorded many interesting discoveries of his own, made during extensive excavations in the years 1897 to 1900. He argues that the original settlement of the invaders was on the high ground near the confluence of the rivers Irwell and Irk, on which Chetham's College and the Cathedral now stand, and that afterwards they proceeded to the erection of a larger and more extensive station at Castlefield, on the banks of the Medlock. It was garrisoned at first by the foreign auxiliary soldiers called the First Cohort of Frisians, attached to the 20th legion, then stationed at Chester. It is unfortunate that the numerous inscribed stones, pottery, coins and other Roman remains that have been found at Manchester are at present scattered in various public and private collections, and it is to be hoped that whenever a municipal Antiquarian Museum is established in the city they may be brought together.

Of incidents connected with the rule of the English or Saxons little is known. Among other traditions is one that Manchester in the year 689 was selected as the residence of Queen Ethelberga, wife of Ina, King of Wessex, during his march against the Welsh; and that the King himself, having beaten back the invaders, rested at Manchester for three months. The next tradition brings us to the year 863 when the Danes are said to have sacked the town, "the townsmen carrying themselves valiantly" against their harrying foes. Manchester suffered severely from the ravages of the Danes, and lay in a ruinous condition for a long time, during which it was of less importance than its neighbour Salford. In the year 923 King Edward the Elder, son of Alfred the Great, rebuilt and fortified Manchester. The authority for this is the "Anglo-Saxon Chronicle," which states that "in this year, after harvest, King Edward went with his forces to Thelwall and com-

manded the town to be built and occupied and manned; and commanded another force, also of Mercians, the while that he sate there, to take possession of Manchester, in Northumbria, and repair and man it."

The place-names in and around Manchester afford abundant evidence of the long period of the rule of the Saxons, to whom is due the division of the district into hundreds and townships. In 1066, and earlier, the hundred of Salford was held by King Edward the Confessor. He was superior lord of the whole hundred, but the only portion that he retained in his own hand was the manor of Radcliffe. William the Conqueror granted the land between the Ribble and the Mersey, including Manchester and Salford, to Roger of Poictou, but the grant was forfeited before the completion of the Domesday Survey in 1086. In that survey two churches—St. Mary's and St. Michael's —are mentioned as holding land in Manchester, and this has given rise to the statement that both churches were situate in the town It is now, however, understood that the Church of St. Michael was at Ashton-under-Lyne, originally in the parish of Manchester.

The first baron of Manchester is regarded, though with some uncertainty, to have been Albert Grelley or Greslet, a favourite of Roger of Poictou. He flourished from 1086 to about 1100. His son, Robert Greslet, who undoubtedly held the demesne of Manchester, was a co-founder of the Cistercian Abbey of Swineshead, Lincolnshire. Eight of the Greslets held the barony and manor of Manchester, the last of them dying about 1313. The first of the family known to have lived here is Robert (1182—1230), and his residence is supposed to have been the Baron's Yard or Hull, on the site of Chetham's Hospital. He was one of the barons who demanded Magna Charta from King John at Runnymede in 1215, and he obtained charters for an

annual fair to be held at Manchester (1222—1227). The last of the Greslets, Thomas, granted a charter to his burgesses of Manchester in 1301, and it was by this charter that the town was governed for over five centuries. Seventy years earlier—1231—Salford had received its charter creating it a free borough from Randle Blundeville, Earl of Chester and Lincoln.

Thomas Greslet, who died in 1313 unmarried and without issue, made a formal grant in March, 1309, of the manor to his sister Joan and her husband, Sir John La Warre, Baron of Wickwar, Gloucestershire. This Sir John alienated the manor in 1310-11, to the Abbey of Dore, Herefordshire.; but it reverted to him, as an escheat from the Abbey in 1325-6. John La Warre and his grandson and great-grandson distinguished themselves as soldiers, the first fighting at Cressy, the second at Poictiers, and the last in the wars in Gascony with Prince Edward. The twelfth Baron of Manchester was Thomas La Warre, a priest, Rector of Manchester, who succeeded his brother in 1398 as lord of the manor. This worthy ecclesiastic procured the collegiation of the Parish Church in the year 1421, and liberally endowed his new foundation. He died in 1427, and was succeeded by Sir Reginald West, the husband of his half-sister. The Wests held the manor until 1579, when they sold it to John Lacye, a London mercer, for £3,000, who in turn disposed of it in 1596 for a profit of £500 to Sir Nicholas Mosley, a Manchester man, who had become a prosperous London merchant, destined to fill the office of Lord Mayor three years after his purchase of the manor. In his family the manor remained until the year 1845, when the whole of the manorial rights were purchased by the Corporation for the sum of £200,000.

With the possible exception of the Cathedral, which

is described in another chapter, the most interesting build-in Manchester, both architecturally and historically, is the Chetham Hospital, or "the College." It is generally supposed that it was erected by Thomas La Warre in 1425 as a residence for the guild of clergy of his collegiate church, and that it stands on the site of the Baron's Hall, the ancient house of the lords of Manchester. It is possible that some portions of the building are of an even earlier date. It formed part of his "foundation," and was continued in use as a clergy house for over a hundred and twenty years, namely to 1547, the first year of Edward VI., when the college was dissolved by Act of Parliament. Then it was taken into the King's possession, and by him sold to the Earl of Derby. At the restoration of the charter by Queen Mary in 1553 the college house was retained by the Derby family, who remained undisturbed also at the re-foundation by Queen Elizabeth in 1578. It is frequently asserted that when John Dee was warden he was visited in his rooms in the college by Sir Walter Raleigh, Sir Henry Savile and other courtiers. There is, however, no evidence that we know of for this assertion. In 1642 the estates of the then royalist Earl of Derby, including the college buildings, were confiscated by the Parliament. These buildings were afterwards let to various persons, and were in danger of destruction by decay and neglect. Ultimately, however, they were, in 1656, purchased by the trustees of the will of Humphrey Chetham, and, after being repaired, were occupied for the purposes of a public library and a hospital for the education and maintenance of poor boys They continue to be used to the present day for the same purpose.

Close to the Chetham Hospital is the Grammar School, founded in 1515 by Hugh Oldham, Bishop of Exeter, and one of the oldest public schools in England. The present

huge buildings were erected in the nineteenth century. Not a trace remains of the original structure. Of its appearance in the sixteenth or seventeenth century we know nothing, as no drawing of the old school has been discovered. An engraving of a gable-end of the school as it existed when Thomas De Quincey was a scholar here is given in the "Foundations of Manchester," but that apparently represents an eighteenth century building. For the annals of the school and its distinguished masters and pupils down to 1830 reference may be made to the "Foundations of Manchester," Smith's "Admission Register" and E. Axon's "Bygone Lancashire."

When John Leland, the antiquary, visited Manchester about 1538, he thought it "the finest, best builded, quickest and most populous town of all Lancashire." Its picturesque aspect as a country town continued unchanged until the beginning of the nineteenth century. For a general view of the old towns of Manchester and Salford we have two or three interesting engravings published in the first half of the preceding century; and for representations of the black-and-white houses in the neighbourhood of the Collegiate Church we are fortunate in having Jackson's and James's "Views" (1821-5). Nearly the whole of these old domestic buildings are gone, only a few of them lingering still in Market Place, Long Millgate and Withy Grove, and in Greengate, Salford. One or two of them bear their age very well, but others show signs of grievous neglect and decay. Gone also are most of the old halls, the residences of certain well-known local families. In Manchester we still have Clayton Hall, a seat of the Byroms and Chethams; in Salford, Ordsall Hall, the home of the knightly family of Radcliffe; in Broughton, Kersal Cell, where John Byrom, the stenographer, wit and hymn-writer lived; and in the neighbourhood there are Agecroft, Hough End, Wardley and several other picturesque-looking Halls.

An interesting example of ancient masonry is at present to be seen, after being buried for many generations, and with the probability of being again buried. It is a portion of Hanging Bridge, near the Cathedral, dating, as is supposed, from the year 1400. It crossed a stream that has long since dried up.

The old Market Place, from which the last of the stalls were cleared away only a few years since, was formerly furnished with a market cross as well as a pillory and stocks. The original mediæval cross was standing in 1680, when it was rebuilt by order of the Court Leet. This was replaced by another in 1752, and finally removed, along with the stocks and pillory, in 1815.

The industrial history of Manchester has never been fully investigated. Woollen and fustian manufactures undoubtedly flourished here from the thirteenth century, and there may be some probability of the truth of the statement that Philippa, queen of Edward III., introduced Flemish weavers into the town in 1363. Mr. Madox Brown has taken this incident as the subject of one of his frescoes in the Town Hall. There was a considerable trade in Irish yarns in the reigns of Elizabeth and James I., and in the following reign we first hear of the importation of cotton wool from Cyprus and Smyrna. Cotton manufacture, properly so-called, did not, however, begin until late in the eighteenth century, when dyeing and calico printing also underwent considerable developments. To the same period may be assigned the rise of the immense local engineering and machinery industry. A great stimulus to trade was given by the opening of the Bridgewater Canals (1761—1795), and still greater impetus to industry was due to the introduction of steam power in manufacturing processes. But these are subjects on which much has been written.

In religious controversies Manchester men have been active from at least the time of the Reformation. Bradford, the martyr, was born here and preached throughout the neighbourhood. The commissioners for establishing the reformed religion in Lancashire under Elizabeth made Manchester their headquarters. Later the Puritan party grew in strength, and had considerable influence in determining the side which the townsmen were to take in the great struggle between King and Parliament. Warden Heyrick was the author of the Lancashire petition for peace which was presented to Charles I. at York in June, 1642. This remarkable remonstrance was signed by over 7,800 persons, and met with an evasive reply from an unbending monarch. Thereupon the townsmen declared in favour of the Parliament, and the Solemn League and Covenant was subscribed by Heyrick and the Puritans generally; the town was put into a state of defence against the Royalist forces that were gathering around, while Salford remained neutral, if not actually Royalist. Before the actual siege began Lord Strange came into the town to demand the delivery of the magazine, and an affray ensued in the course of which a man was killed. This was on 15th July, 1642, and the fatality was one of the first that occurred in the Civil Wars. Lord Strange, who by the death of his father had become the Earl of Derby, endeavoured during the next two and a half months to capture the town, but, being unsuccessful, he raised the siege on October 1st. Early in the following year Manchester was made the head-quarters of the Parliamentary troops then engaged in Lancashire and Cheshire, and then and afterwards bore its share in the sacrifices and privations of that trying time. In 1646 the Presbyterian system of church government was set up in Lancashire, and the Manchester "Classis," with Heyrick at its head, became the most im-

Statue of Humphrey Chetham in Manchester Cathedral.

Photo by F. Ireland. *Manchester.*

CHETHAM'S HOSPITAL AND LIBRARY.

Photo by F. Ireland, Manchester.

DINING HALL, CHETHAM'S HOSPITAL.

From Ralston's Drawing.

MARKET PLACE, MANCHESTER.

portant and the most active of all the divisions of the county. The records of the Classis from 1646 to the Restoration have been printed in full by the Chetham Society, and present a valuable picture of local religious and social life. The restoration of Charles II. was welcomed nowhere with greater fervour than by the Manchester Presbyterians. Heyrick, who preached an exceedingly loyal sermon on the occasion, retained his post as warden and resumed the services of the Church of England as by law re-established. After the Revolution Manchester became a stronghold of the Jacobites and Nonjurors, and in 1694 was the scene of the trial of those concerned in the so-called Lancashire Plot. In the rising of 1715 the clergy and some important inhabitants favoured the Stuarts, and five men were hanged at Manchester on 11th February, 1716, for participation in the Rebellion. In the later rising of 1745 Prince Charles Edward found many sympathisers in Manchester. He came and "took possession" of the town, was hospitably received, and some three hundred recruits joined his army. The Manchester regiment during the Pretender's retreat was left to garrison Carlisle, where they surrendered to the Duke of Cumberland, the officers being sent off to London and executed on Kennington Common. Some dramatic incidents of this episode in local history are told in the "Journals" of the celebrated John Byrom, who, along with Dr. Deacon, the Rev. John Clayton and some other clergymen of the town, was in close sympathy with the Pretender.

The closing years of the eighteenth century were disturbed by political agitations, and the early years of the nineteenth century by fears of a French invasion and the raising of volunteers for national defence. Distress, caused chiefly by war and oppressive taxation, was prevalent, and the people rose up in efforts to find relief. Some

of the local disturbances were directed against the introduction of machinery in manufactures, in the belief that wages were thereby lessened. In May, 1808, a riotous meeting of weavers was held to petition Parliament to fix the minimum rate of wages. In 1812 thirty-eight men were imprisoned for administering the Luddite oath at a public-house in Ancoats. In 1817 open-air meetings were held to protest against the suspension of the Habeas Corpus Act, and some thousands of those present at these meetings set out to walk to London with a petition to the Prince Regent. Each man was provided with a blanket, and hence the movement was called the March of the Blanketeers. But the most important affair was that of 16th August, 1819, since called Peterloo. An immense crowd gathered in St. Peter's Fields to petition Parliament for a redress of their grievances. The authorities, assisted by the police, special constables, a body of Manchester yeomanry and some troops of infantry and cavalry, determined to disperse the crowd. Through some blunder the Riot Act was not properly read or heard, and without giving the people time to disperse the Hussars were ordered to charge, with the result that several persons were killed and many more injured. This unfortunate affair led to much bitterness of feeling against the official classes for many years. The Reform agitation, the Anti-Corn Law movement, and fortunes of the Whig and Radical and the Conservative and Liberal parties during the last eighty years will be found recorded in another chapter.

A selection only of the more striking occurrences of local interest in the nineteenth century can be mentioned, and these only very briefly. The opening of the Manchester and Liverpool Railway in 1830 was an event of the greatest importance. The first railway station—now the oldest—in the world is still to be seen in Liverpool

Road, scarcely altered, though not now used for its original purpose. Manchester was incorporated in 1838, the town having, as already stated, been governed until that time by officers appointed by the Court Leet. The town embraced at first only 4,293 acres. This area was extended in 1885 by the inclusion of several out-townships to 5,933 acres, and further extended in 1890 to 12,911 acres, and in 1901 to 19,903 acres. The Corporation of Salford was created in 1844. The Saturday half-holiday was first granted by the merchants of Manchester in 1843, in response to a petition promoted by William Marsden, a young warehouseman. The two towns took the lead among provincial towns in obtaining public parks and playgrounds. Three estates were bought in 1845 by means of public subscriptions, and, after being laid out, were handed over to the Corporations—two for Manchester and one for Salford. The present number is, of course, much greater. The bishopric of Manchester was created in 1847, when Dr. James Prince Lee was appointed to the see. Among his other distinctions was that of having had among his scholars at King Edward's School, Birmingham, three boys who became famous Churchmen—Dr. Benson, Archbishop of Canterbury; Dr. Lightfoot, Bishop of Durham; and Dr. Westcott, also Bishop of Durham. Queen Victoria paid her first visit to Manchester in 1851. Two years later she granted a charter conferring the title of city upon the borough. In 1857 the Art Treasures Exhibition was held. It was the first exhibition of its kind, being entirely devoted to pictures, sculpture and other objects of fine art, and was not only eminently successful, but has never been equalled since. It was opened by the Prince Consort, and was visited at a later date by the Queen. The Lancashire cotton famine, caused by the American War, occasioned great distress in and around Manchester during the years

1862 to 1865. A National Cotton Relief Fund, which eventually reached a total of considerably over a million, was raised and expended. In 1867 there was great excitement on the murder of Police Sergeant Brett and the rescue of certain Fenian prisoners. For this crime three men—Allen, Larkin and Gould, since called by their compatriots the "Manchester Martyrs"—were executed in front of Salford Prison on 23rd November. A most successful Fine Art and Industrial Exhibition was opened by the Prince and Princess of Wales in 1887—the Jubilee year—the profits of which, amounting to £43,000, were handed over to the Technical School and the Whitworth Institute. In 1893 the title of Lord Mayor was conferred on the chief magistrate of the city by Royal charter. In the following year (21st May) Queen Victoria paid her third and last visit to Manchester, when she opened the Ship Canal. In March, 1902, the city was visited by the Prince and Princess of Wales, who came to open the Whitworth Hall at Owens College, and on July 13th, 1905, King Edward VII. and Queen Alexandra made a progress through Manchester and Salford, and opened a new dock at the Ship Canal.

CHAPTER II.

THE POLITICAL HISTORY OF MANCHESTER.

By WILLIAM E. A. AXON, LL.D.

If Manchester exerted any political influence in the middle ages the fact has escaped the attention of chroniclers and historians. The first literary reference to the town is in the eclogues of Alexander Barclay, written in the early years of the sixteenth century. The first distinctively "Manchester man" to make his mark in the English annals was John Bradford, the Protestant martyr, who was burned at Smithfield in 1552. The contest between the Roman Catholics and Protestants was keen, and Manchester was a place of imprisonment for those who refused to acknowledge the supremacy of Queen Elizabeth. Later the heads of two recusants, executed at Lancaster, were exposed on the summit of Manchester Church in 1584. The Puritan influence proved the stronger, and when the struggle came between the King and Parliament, Manchester was a rallying-place for the partizans of the Commonwealth, in spite of the great influence of the Stanley family in the town and neighbourhood. The petition for peace, presented to Charles I., at York, was drawn up by the Rev. Richard Heyrick, Warden of the Collegiate Church. The King's evasive reply decided the part which the town was to take. A skirmish on July 15th, 1642, between the Puritans and the followers of Lord Strange is said to have been the occasion of the first blood shed in the Civil War. In September, Lord Strange laid siege to

Manchester, which was stoutly defended by the burgesses. Whilst thus attacking the town in which his family had so large an interest, Lord Strange, by the death of his father, became Earl of Derby. The siege, in which the Royalists suffered a very disproportionate loss, was raised on the first day of October. From a modern point of view these military operations have a small appearance, but there is no reason to doubt that the able resistance of Manchester encouraged the Puritans, and gave them that assurance of success which is so important in such a struggle. The horrors of the plague were added to the miseries of Civil War, and in 1645 Parliament voted £1,000 for the relief of the town, and collections were made for the same purpose in the London churches.* But although the town was in the main Republican, there were some stout Royalists amongst its people, and when, after the battle of Worcester, the Parliamentary proclamation against Charles Stuart, King of Scots, was being publicly read, one of these tore it in pieces. Manchester was represented in the House of Commons in the Parliament of 1654, and not again until the Reform Act of 1832. The reaction from the Commonwealth was felt in Manchester, some of whose people shared in the unsuccessful Cheshire Rising of 1659. The Restoration of Charles II. was celebrated with great rejoicings. The Presbyterians who had aided his return had their reward in the persecution caused by the Act of Uniformity when Manchester became the resort of many of the ejected ministers. After the Revolution there was more toleration, but the Jacobites were strong in the town, and in 1715 they celebrated the birthday of the Old Pretender by riot and the wrecking of the Dissenting Chapel in Cross Street. Parliament granted £1,500 as

* It is to be noted that Manchester was frequently visited by pestilence. Thus there were outbreaks in 1590, 1594, 1605, 1631 and 1645.

compensation. The ringleader, Tom Sydall, was arrested, but the Jacobite rebels released him at Lancaster. On the suppression of this Stuart insurrection he was executed, with five others, at Manchester, for high treason. There was a keen division of feeling in the town which was characteristically exemplified at the Collegiate Church, where the Whig Warden Peploe praised the Revolution of 1688, whilst his Jacobite clergy set forth the "right divine of Kings to govern wrong." When the ill-starred Prince Charles Edward raised the Stuart Standard in 1745, Manchester was the only English town where he received any considerable aid. Corporal Dickson, accompanied by his sweetheart and a drummer, entered the town in advance of the general body of the army of the Young Pretender. An attempt to arrest him was defeated, and he enlisted a number of the townsfolk before the main body of the Jacobites arrived. The "Manchester Regiment" numbered about 300 men, and was received by the Prince after he had attended service in the Collegiate Church. James III. was proclaimed, and there were public illuminations. John Byrom, the poet and stenographer, cautiously paid his respects to the Prince as a "prisoner," whilst his daughter was busy making white cockades and St. Andrew's crosses for the rebels. The Jacobites marched from Manchester on December 1st, and returned on December 8th, after the retreat from Derby had been decided. Whatever chance the Young Pretender had of recovering the throne of his ancestors was cast away by that resolution. In passing again through Manchester he levied a contribution of £5,000. Many of the "Manchester Regiment" were taken prisoners at the surrender of Carlisle. Col. Francis Townley and others were executed at Kennington Common, and the heads of Thomas Syddall (whose father was executed for his share in the rebellion of 1715), Thomas

Theodorus Deacon, and Thomas Chadwick, were spiked on the Manchester Exchange. The Jacobite sentiment survived for some time, and was well-expressed in Byrom's epigram—one of the best in the language:—

> God bless the King! I mean our Faith's Defender,
> God bless, no harm in blessing, the Pretender!
> But who Pretender, or who is King—
> God bless us all—that's quite another thing!

The hopelessness of the Stuart cause reduced Jacobitism to harmlessness, and the growing industrial importance and prosperity of the town turned the attention of the people to more profitable matters. But party spirit prevented the incorporation of the borough in 1763, although it had quite outgrown the form of government by a Manorial Court Leet set up by the Charter of 1301. The opening of the Bridgewater Canal added to the wealth of the town. In 1775 the Theatre Royal was opened, and was occasionally the scene of the exhibitions of political feeling. It is a curious fact that when the bill for the erection of this patent theatre was before the House of Lords, the project was opposed by a bishop as destructive to morals, and advocated by a peer as an antidote to Methodists in which who had grown strong in the town.

When the American Revolutionary War broke out, Manchester sentiment was strongly in favour of the coercion of the colonists, and £8,075 was subscribed for the raising of the Seventy-second Regiment. This corps had the good fortune to be diverted to Gibraltar, where the Manchester men shared in the heroic defence of the rock fortress in the famous siege. The ill-success of the American war did not damp the enthusiasm with which the struggle with France was entered upon. Those who opposed were styled Jacobins. The house of Mr. Thomas Walker and the office of the "Manchester Herald" were

attacked with the undisguised sympathies of the clerical magistrates and the authorities. A law against seditious assemblies was passed in order to prevent any argument against the war or any plea for Parliamentary reform. A humorous protest was made by the "Manchester Thinking Club," who assembled, not to debate, but for silent consideration of public affairs. "Thinking," it was announced, was "to begin precisely at eight." Meanwhile there was great distress from the dislocation of trade, aggravated by the growing burden of taxation. A meeting of weavers in 1808 was broken up by the military, and a man killed. Col. Hanson, who tried to induce the men to disperse by a promise that their interests should be seen to, was subsequently fined £100 and imprisoned for six months, on the ground that in so doing he had "encouraged the rioters." In 1812 there were food riots, and the Manchester Exchange was wrecked by a mob. The Government, instead of attempting to redress grievances and to improve the condition of the working people, who were half-starved, employed spies, who first beguiled their victims into conspiracy, and then betrayed them to the authorities. In 1816 the Habeas Corpus Act was suspended, and the demand for an inquiry into the conduct of the Manchester magistrates was rejected by 162 votes to 62 in the House of Commons. In June, 1819, the Reformers held an open-air meeting, at which it was decided to abstain, as far as possible, from exciseable articles, in order to embarrass the Government by the consequent loss of revenue. In reply the town was placarded with exhortations to drinking, and an effort was made to charge the expense of these posters on the church rate! The Reformers proposed to appoint "a legislatorial attorney and representative" for the town, but the meeting at which this was to have been done was declared unlawful, and was abandoned. On

August 16th, 1819, a great meeting of Reformers was held in St. Peter's Fields, and from sixty to eighty thousand persons were present. Samuel Bamford marched with the Middleton men, and there were contingents from other Lancashire towns and villages outside Manchester. Henry Hunt, the leader of the artisan Radicals, had only just begun his speech when, without warning, the Manchester Yeomanry and the Hussars, who, with other military were in readiness, were let loose upon the crowd, and eleven persons were killed and some hundreds wounded. The man most responsible for the Manchester massacre was the Rev. W. R. Hay, who was rewarded with the rich living of Rochdale. It was claimed that the Riot Act had been read, but if so, none in the crowd heard it. Sidmouth conveyed the thanks of the Prince Regent to the magistrates and the military. Earl Fitzwilliam was dismissed from his position as Lord-Lieutenant of the West Riding of Yorkshire, and Sir Francis Burdett was fined and imprisoned for expressing sympathy with those who had upheld the right of public meeting. Hunt, Bamford and others concerned in the Peterloo gathering were imprisoned. Meanwhile all proposals for admitting the great manufacturing towns to a share of Parliamentary representation were voted down. On the accession of William IV. the Duke of Wellington denied that "the state of representation could be improved or rendered more satisfactory." He was shortly afterwards defeated, and Earl Grey became Premier, and a Reform Bill was introduced. It passed the House of Commons, and was thrown out in the Lords. The excitement in the country was intense. The Reform Committee sat daily at the Town Hall, and a petition was adopted calling upon the Commons to refuse to vote supplies until the Bill was passed, and the deputation carrying it reached London in seventeen hours. In the

end the forces of reaction had to give way. The choice in reality lay between Reform and Revolution, and the peers allowed the Reform Bill to pass.

By giving representatives to the great boroughs and by admitting the ten-pound householders to the franchise a great change was effected, and the result was seen in the legislation which followed. The Reform of the Poor Laws and of Municipal Corporations, the Health of Towns Commission were efforts in which Manchester shared, but it was chiefly in connection with the establishment of Free Trade and in the passing of the Ten Hours' Bill that the city became politically famous. The Corn Laws, enacted in 1815, whilst the House of Commons was guarded by soldiers, had made the food of the poor artificially dear, and hindered the free exchange by nations of those products which were of mutual benefit. The Anti-Corn Law League was formed in Manchester, and Bright and Cobden devoted their energies to the task of convincing the nation that Free Trade was the road to national prosperity and international concord. The fight was a stern one, and might have been longer but for the calamity of the Irish famine, which convinced Sir Robert Peel, the head of the Protectionist Government, that the Corn Laws could no longer be maintained. Their repeal involved a revolution in the fiscal policy of the country. "Manchesterthum," as the Germans call the body of doctrine held by the "Manchester School," included peace, non-intervention in foreign politics, and leaving as much as possible to individual initiative. So much mischief had been done by bad laws that there was a strong feeling against any legislation that was not absolutely necessary. Hence it was that some of the Manchester leaders were opposed to the interference of Parliament with the hours of labour. The evils of the factory system were, however, beyond the

power of remedy by mutual arrangement between employers and employed, especially as the combinations of workpeople were still outside the pale of the law. The members of the Manchester School were not all opposed to labour legislation. It was opposed by John Bright as a consequence of his individualist opinions, but it was supported by John Fielden and Joseph Brotherton. Great was the gratitude of the Lancashire operatives to Lord Shaftesbury for his advocacy of the Factory Acts. The repeal of the Corn Laws and the passing of the Ten Hours' Bill represent the two streams of tendency by which the British people have tried to get the best out of what at first seem the contradictory principles of Freedom and Control, of individual and of collective effort. From the election of 1832 to that of 1867 the representation of Manchester was entirely Liberal. At the election of 1868 a Conservative was first elected, under the minority clause. During the twenty years following 1885 the representation was preponderatingly Conservative, but at the General Election of 1906 the Liberals captured the whole of the seats. A similar change has occurred in the sister borough of Salford.

Towards the end of the 18th century the antiquated and inadequate system of government by the Manorial Court Leet was supplemented by the creation of improvement commissions, on whom devolved certain limited duties in connection with police and street cleaning and making. Manchester received a Charter of incorporation in 1838, and Salford in 1844. The commissioners were superseded by the Corporation in 1843, and three years later the Corporation purchased the rights of the lord of the manor. Except in the first few years of the Manchester Corporation, when the Conservatives abstained from participating in municipal work, party politics have played a very small

part in local government, men of both parties having worked together for the public good. Through the wisdom and enterprise of the local governing bodies many important advantages have been secured. The closing of cellar dwellings, and the provision of a liberal supply of water, the management of the gas works, the provision of extramural cemeteries, the opening of public parks, free libraries and art galleries, the creation of a great technical institute, and the aid given to the ship canal, are amongst the results of which the municipality may justly be proud. The fine Town Hall, one of the largest civic buildings in the country, is a fitting symbol of the pride which the Manchester man feels in being "the citizen of no mean city." This position was acknowledged when it was created a city in 1853, and in 1893, when the title of Lord Mayor was conferred upon its chief magistrate.

The success of the Anti-Corn Law League introduced a new method into English politics, and Manchester has been the home of several associations based on the same general plan. Organizations having their headquarters in Manchester took part in the long agitation which culminated in the Reform Bill of 1867, and the National Reform Union still conducts its propaganda from Manchester, which was also for many years the centre of the women's suffrage movement. The United Kingdom Alliance was formed here in 1853, and whilst it has not secured the suppression of the liquor traffic, it has created a large body of temperance sentiment, and has made itself strongly felt in Parliament and out. The Sunday Closing Association is also worked from this centre, as are one or two leading organisations for the defence of the liquor trade. The education question has been an important one in Manchester politics. The National Public School Association was formed in 1850 for the advocacy of a non-

sectarian system. The Manchester Education Aid Society for a number of years supplied a useful object lesson in its free school. In 1868 a conference held here, at which Mr. W. E. Forster was present, pronounced in favour of a national and compulsory system. In the struggle, which ended in the passage of the Education Act of 1870, the principles of secular education were represented by the Birmingham League, whilst the other side was championed by the National Education Union of Manchester. Of societies for the scientific study of political and social problems, the Statistical Society and the Sanitary Association may be mentioned. The former is the oldest institution of its kind in England.

Manchester, although its history goes back to the days of the Romans, is essentially modern. It was no more than a prosperous market town, until the introduction of steam power and the organisation of the factory system made it the centre of the cotton industry and a world-famous city stretching forth its hands to the ends of the earth.

CHAPTER III.

A SKETCH OF THE PHYSIOGRAPHY AND GEOLOGY OF MANCHESTER.

By W. BOYD DAWKINS, M.A., D.Sc., F.R.S., and MARK STIRRUP, F.G.S.

The modern City of Manchester recalls by its ancient name of Mamcestre or Mancunium, a past whose history dates from the Roman occupation of Britain by the army under Julius Agricola in the year 79 A.D. Most of the accessible parts of Britain were at that time overrun by the Roman troops, when stations or garrisons were established at strategic points to guard the great military roads which were traced across the country. The site of the Roman Station at Mamcestre was near the locality which is still known as Castlefield, at the southern end of Deansgate, and near the junction of the river Medlock with the Irwell, but nothing is left above ground to identify the spot, with the exception of the remains of an old wall, which testifies to the enduring character of Roman mortar. Recent excavations in this district, necessitated by railway extension works, have unearthed the long-buried evidences of Roman occupancy. These consist of the usual refuse and oddments of a Roman camp and dwellings, such as Roman coins, pottery of various kinds, including the plain and ornamental lustrous red Samian ware, the black pottery of Upware, with objects of iron, bronze, lead and glass.

The later history of Manchester as an industrial town

dates from the close of the 14th century, at which time woollen manufactures were introduced into England. Cotton, for the spinning and weaving of which Lancashire has become famous, was not brought to England until early in the 16th century, after which time cotton fabrics gradually superseded those of woollen. Modern Manchester, in its phenomenal growth, has long outstripped these early days, and has now become the mart for the sale of the products of the countless spinning and weaving mills of the manufacturing towns of the whole of South Lancashire—extending northwards beyond Preston.

Turning now to the physical features of the district, which influence in a great measure the dominant climatal conditions, it may be noted that Manchester lies in the south-eastern portion of the county of Lancaster, and in close proximity to the northern border of Cheshire, the latter county approaching within three or four miles of the southern part of the city.

It is situated on the banks of the river Irwell, into which, before quitting the urban boundaries, two tributary streams, the Medlock and the Irk, discharge their polluted waters.

The latter river (the Irk) takes its rise in the high ground near Oldham, to the north-east of Manchester, while the main stream (the Irwell), pursuing a longer course, has its source in the hills to the north-west of Bacup and south of Burnley. These rivers, which carry the main drainage of the district, are defiled almost from their sources by the dyeworks and other industries established on their banks. They pour their united waters in the river Mersey near the village of Irlam, some ten miles to the south-westward of the city. The river Mersey, receiving other tributaries by the way, thence flows westerly by Warrington and Runcorn to the sea at Liverpool.

From Ralston's Drawing

SALFORD CROSS.

Photo by F. Ireland. *Manchester.*

DEANSGATE.

Manchester, though built upon a somewhat flat or undulating stretch of ground, is yet within easy distance of breezy hills and high moorlands, which are plainly visible from the outskirts of the city on a clear day.

These heights, composed of Lower Coal Measure or Millstone Grit rocks, approach within eight or ten miles of the city on its eastern side, near Stalybridge, in that tongue of Cheshire which is prolonged north-eastward, and which divides Derbyshire and Yorkshire from the south-east angle of Lancashire.

These same hills are continued southward, but diminished in height, by Marple, Disley and Whaley.

Also to the north-west, and within a twenty-mile radius of Manchester, from Horwich Moor, near Bolton, by Summerseat and Rochdale on the north, to Saddleworth on the north-east, a similar hilly country meets our view.

The higher moorlands of Millstone Grit, ranging from 800 feet to 2,008 feet, on their descent form tablelands, often peat-covered, and are the gathering grounds for the water supply of the towns situated below. The moisture-laden clouds, carried across the island from the Atlantic by the prevailing westerly winds, are here condensed.

It was to the rainfall on the high bleak moorlands of the Pennine range of hills, which form the border-lands of the three countics of Cheshire, Derbyshire and Yorkshire, that Manchester, until a few years ago, owed its main water supply. The Woodhead series of reservoirs in the Longdendale valley, some eighteen miles from the city, on the Sheffield Railway line, were estimated to furnish 25 millions of gallons per day; but owing to extensions of the city boundaries, and the increased requirements for sanitary purposes, this source of supply became insufficient. This state of things led to the acquirement of Lake Thirlmere, in the Lake District, which, after long negotia-

tions, the payment of large compensation claims and other expenses, became the property of the citizens of Manchester. It is capable of yielding 50 millions gallons per day.

These highlands are therefore important agents in promoting the generally healthy condition of the crowded and densely-populated area of what may be called the Greater Manchester, by providing refreshing breezes and pure water, so necessary for their welfare.

To the south of the town stretches the drift-covered Triassic plain of Cheshire, with its rich agricultural and pasture lands, its meres and parks surrounding the ancestral home of many an ancient house. The "wiches," or salt towns of Cheshire, of which the district of Northwich, within about twenty miles of Manchester, is at present the most productive, have been long famous for their production of salt, the manufacture from brine dating back to Roman times.

The salt beds lie in the Red Marls of the Trias.

Within seven to ten miles of the city occur extensive peat mosses, bordering both sides of the river Mersey, as at Carrington, Irlam and Glazebrook. These mosses have been long undergoing drainage, and are now much shrunk from their former dimensions. Their size and number probably indicate a lower average annual temperature than that which now prevails. Other smaller ones occur nearer to the city.

The great waterway of the Manchester Ship Canal to the estuary of the Mersey at Eastham follows for the most part the natural channels of the rivers Irwell and Mersey on their way westwards. This gigantic undertaking, for which the first sod was cut by Lord Egerton of Tatton in 1887, was the outcome of much popular enthusiasm and hopefulness. The enormous expenditure incurred in its promotion, together with the necessary works and ex-

cavations, necessitated in a few years an appeal to the Corporation of Manchester for financial aid to ensure its completion. This help was granted in 1891, and now amounts to an indebtedness to the city of five million pounds. The canal was formally opened to traffic by the late Queen Victoria on May 21st, 1894.

The importance which Manchester has obtained as a centre of textile, mechanical and chemical industries is undoubtedly due to its vicinity to the rich coalfield of South Lancashire, which intervenes between it and the high moorlands previously referred to.

It is another evidence, if one were needed, of the intimate relationship that exists between England's great hives of industry and the natural resources that the geological nature of the district affords.

The foregoing remarks will give some idea of our physical surroundings; and now, as far as our limits will permit, it will be desirable to confine our attention to the geological aspect.

A thickly inhabited area like Manchester, whose ever-increasing mileage of streets gradually absorbs its once green and pleasant suburbs, presents at first sight but few attractions to the geological student. Moreover, our district does not offer that varied range of geological formations, nor does it possess those natural advantages or attractions that do many other localities visited by the Association.

The solid geology is for the most part obscured by thick deposits of Glacial Drift (Boulder Clay, Sands and Gravels), which so generally overspread the neighbourhood. Owing to this covering of drift and the natural configuration of the country, sections of the rocks are scarce, and some that were visible on the river banks some thirty or forty years ago are either now enclosed or built over.

Notwithstanding these disadvantages and drawbacks, there are many important problems connected with our local geology which invite the attention of the earnest geologist and palæontologist.

The fauna and flora of our carboniferous rocks are but imperfectly understood, and will well repay the diligent worker among the fragmentary records of a period rich in vegetable and animal life.

The Glacial Drifts yet await some fuller explanation of the manner and the mechanism of their deposit and the localities whence their heterogeneous materials were derived.

If we could strip off the glacial drifts, we should find an irregular eroded surface of Triassic, Permian and Carboniferous rocks dipping to the west and forming the western side of the great arch out of which the Pennine Chain has been carved by the elements—by rain and rivers, frost, snow, and ice and the dash of the waves during the long series of geological ages.

The Carboniferous Rocks.

The oldest rocks in the Manchester district are of carboniferous age, and consist of the following divisions:

Upper Coal Measures	1,680 to 2,000 feet
Middle Coal Measures	3,000 ,, 4,000 ,,
Lower Coal Measures	1,400 ,, 2,000 ,,
Millstone Grit	3,500 ,, 5,000 ,,
Yoredale Shale and Limestone	2,000 ,, 4,000 ,,
Carboniferous Limestone	5,500 feet

The Carboniferous Limestone, which has this enormous thickness in Derbyshire, where it constitutes the picturesque gorges of Miller's Dale, Monsal Dale and others near Buxton and Matlock, consists for the most part of

calcareous accumulations formed at the bottom of a deep and clear sea by varied plants and animals. Associated with it are the sheets of lava (diabase), locally termed *toadstone*, poured out through fissures opening at the bottom of the sea while the limestone was being accumulated, without trace of any volcanic cones. The *Yoredale shales*, sandstones and thinly-bedded limestones, also of marine origin, but formed in a shallow sea not far from the land, rest conformably upon the Carboniferous Limestone, and are covered in turn by the Millstone Grit, a massive series of petrified sandbanks and mudbanks, full of fragments of the flora living on the adjacent land. The high tableland and the most striking of the sandstone ravines and scars in the Pennine Chain have been carved out of this rock. As we descend to lower levels nearer to Manchester the three important divisions of the Coal Measures are traversed, with their numerous and valuable series of beds of coal, each resting upon a surface of growth traversed by rootlets, and each composed of the accumulation of vegetable matter once growing in forests or on flat surfaces near the water level. The adjacent waters during the time of the Lower Coal Measures were mainly marine, during the Middle Coal Measures mainly fresh, and in the Upper partly fresh and partly marine. In the Upper Coal Measures, which form the greater part of the Manchester coalfield, are several peculiar layers of limestone full of flat spiral shells of the Annelid, known as Spirorbis, formerly worked at Ardwick, and therefore called Spirorbis or Ardwick Limestone. This limestone has the peculiar property of setting under water and is therefore used as a hydraulic lime.

The Carboniferous Forests consisted mainly of lepidodendroid and calamitean trees, allied to the living club-mosses and mares-tails, and of conifers closely allied to

the *Salisburia* and the *Araucaria excelsa*, with a luxuriant undergrowth of various ferns, some of which were tree-ferns. The Carboniferous Forests are amply represented in the Manchester Museum, Owens College. The base of the trunk of a gigantic tree from near Bradford, Yorkshire (facing page 32), is particularly worthy of notice as showing the noble proportions to which some of these ancient forest growths attained. At the close of the carboniferous period the whole of the carboniferous rocks were thrown into a series of folds, of which the most important in this district is that out of which the Pennine Chain has been carved. On the eroded edges of the Upper Coal Measures lie unconformably the Permian Rocks, contrasting in their physical character and bright red colour with the rocks below from which their materials were torn by the dash of the waves on a retreating coast-line. An excellent exhibition of carboniferous fossils may be seen at the Museum, Owens College.

The Permian Rocks.

The Permian rocks consequently rest unconformably on the older Coal Measures, and are a series of Sandstones and Marls of very irregular thickness. At Collyhurst the Permian Sandstone, friable and mostly of a deep red colour, is 350 feet, and is covered by red marls 233 feet in thickness. In the lower portion of the marls is a layer of calcareous nodules containing *Schizodus* and other typical shells. This forms a well-marked horizon in the deep borings in the neighbourhood of Manchester. It is the only representative of the thick Magnesian Limestones of the eastern side of the Pennine Chain.

In the year 1890 Manchester geology was enriched by the opening out of sections in the Upper Coal Measures and Permian beds at Fallowfield during the cutting of a

new railway line from Fallowfield to Stockport Road. Some of the marl and limestone bands of Permian age then exposed were very fossiliferous, yielding the usual representative Molluscan fossils, such as two or three species of *Schizodus*, examples of *Gervillia, Pleurophorus, Turbo, etc.**

The New Red Sandstone.

The Permian Marl is proved in many deep borings and cuttings to be covered unconformably by the New Red Sandstone or Triassic strata which underlie the superficial deposits of the Lancashire and Cheshire plain, with a general dip to the west, or away from the Pennine Chain, in the neighbourhood of Manchester. It consists of the following divisions:—

		Feet
B Keuper	5. Red Marl with rock-salt	3000
	4. Water stones.....	500
	3. Upper Mottled Sandstone ...	500
A Bunter	2. Pebble-beds	650
	1. Lower Mottled Sandstone ...	100

These petrified sand-banks and mud-banks are highly charged with peroxide of iron, and have been formed in a shallow land-locked sea subject to tidal influences. The ripple-marked and sun-cracked surface of some of the layers of sandstone in No. 3 and No. 4, and the well-marked hand-like foot-prints of *Cheirotherium*, a large Deinosaurian land-reptile, in the Upper Mottled Sandstone of Stourton, near Liverpool, and in the waterstones of

* Slabs of the rocks and specimens of the fossil shells may be seen in the geological department of the Manchester Museum, Owens College, and particulars, with maps of the sections, may be found in the "Transactions of the Manchester Geological Society," vols. xx. and xxi.

Lymm, near Manchester, imply the existence of a sandy shore between tide-marks. The salt occurs in lenticular masses, in the Red Marls, two of which, struck in the Marston mine at Northwich, measure in thickness 90 and 151 feet. It is associated with layers of rock containing gypsum and selenite, the result of the evaporation of sea-water. Most of the Cheshire meres are caused by the settling of the surface owing to the abstraction of salt by natural springs in the long course of ages. The process is accelerated at Northwich by the vast amount of brine pumped up and used in the salt works, with the result that the area is being depressed beneath the sea-level, and great damage is being done to the buildings in the neighbourhood.

The Boulder-drifts.

A confused series of boulder-clay, sands and gravels rests on the water-worn irregular surfaces of the Triassic, Permian and Carboniferous strata, from the area of the Cheshire plain, and from the sea up to about 1,200 feet in the neighbourhood of Macclesfield, where there is a clearly-defined shore line. These are divided by some geologists into Lower Boulder Clay, Middle Glacial Sand, and Upper Boulder Clay. The lenticular character, however, both of the sands and clays renders classification over a wide area almost impossible.

The clays with ice-marked boulders, are proved by the blocks of Shap granite and other distant rocks, to have been derived from the drift of ice from the north, and the gravels and sands are composed of materials derived from the break-up of the boulder clay on a shore, possibly, while the stranded bergs were melting. The Boulder clay covers the district like a mantle, filling the valleys and concealing the contours of the solid rocks beneath. It is

of variable thickness, ranging from a few up to about 200 feet.

The large boulder of Andesite, in the quadrangle of Owens College, weighing about 25 tons (facing page 33), is a monument of the transporting power of ice. It was picked up by a glacier on the slopes of Thirlmere, and dropped by an iceberg as it floated south over Manchester, to the bottom of the glacial sea, then extending from the Lake District to Bristol. There it remained until its discovery in the construction of the sewer along the Oxford Road near the Church of the Holy Name. It bears the grooves and polished surfaces resulting from the movement of the glacier down to the sea-shore.

The river terraces and the alluvium only remain to be noticed. Both are formed by the materials carried down by the present rivers in ancient times, and are for the most part composed of materials derived from the glacial drift. The rivers in the Lancashire and Cheshire plain have not yet cleared out from their ancient courses the materials which have been dropped into them by the melting of the ice in the glacial period.

The Folds and Faults.

The westerly dip of Permian and Triassic strata away from the axis of the Pennine Chain proves that the elevation of the Pennine Chain, which began at the close of the Carboniferous age, was not ended before the close of the Triassic age. While the Pennine arch was being developed a large number of dislocations or faults in the rock had their origin, of which the one thousand yards or the Pendleton fault in the valley of the Irwell is the greatest. The lateral pressure, too, was so great that in many cases, and especially in the valley of the Irwell, the natural cleavage of the coal into cubes was changed

into a diamond or lozenge shape, locally known as "shuttles," from their likeness to a weaver's shuttle.

For some years past local earthquakes have been experienced in the neighbourhood of Pendleton extending to a radius of several miles around. The centre of disturbance seems to lie in the neighbourhood of the deep coal mines worked at Pendleton and in the vicinity of the Irwell valley fault.

They are therefore probably due here, as in Leicestershire and in Lorn, in the Western Highlands, to slight movements of the rock along the old line of weakness marked by the fault, which have been going on since the close of the carboniferous period, and which have resulted in a dislocation of the strata of no less than 3,000 feet.

For further detailed descriptions of the Geology of Manchester and the neighbourhood, reference may be made to the Memoirs of the Geological Survey and sundry papers in the Transactions of the Manchester Geological Society and the Literary and Philosophical Society of Manchester.

CHAPTER IV.

METEOROLOGY AND HEALTH IN MANCHESTER AND SALFORD.

By JAMES NIVEN, M.A., M.B., *Medical Officer of Health, Manchester; and*
C. H. TATTERSALL, M.R.C.S., L.R.C.P. Lond., D.P.H., M.O.H., *Salford.*

Manchester and Salford lie in a basin in the south-east corner of Lancashire, embraced to the north, east and south by the Pennine Range, surrounded by a number of industrial centres whose main productions are coal, machinery and cotton goods.

They are traversed by the Irwell, the Irk, the Medlock and a number of small brooks, and their suburban districts stretch out to the Mersey; somewhat steep towards the north, their surface is elsewhere comparatively flat.

The Town Hall, Manchester, is situated in N. lat. 53° 28′ 44″ and W. long. 2° 14′ 34″. The mean elevation of the city is 189 feet above ordnance datum, the greatest height being 348 feet in Blackley and the least 80 feet in Cornbrook Road.

The geological strata consist of boulder clay, drift, sands and gravels, overlying a series of strata which dip westward from the Pennine range. These are the New Red Sandstone, the Permian rocks, the Upper, Middle and Lower Coal Measures, and underneath these the Millstone Grit, Yoredale Shale and Limestone, and Carboniferous Limestone.

It thus happens that from the action of the elements the strata are exposed in their reverse order as we descend from the hills about Saddleworth through Oldham; first the Millstone Grit, then the Lower and Middle Coal Measures, and then the Upper Coal Measures, which lie at a considerable depth below the surface in Manchester and Salford.

When a wind rose is formed for five years (1892—1896) we find that the prevailing wind is westerly, but that the prevailing winds are arranged in two groups, one having a comparatively narrow range from W.N.W. to W.S.W., and the other group having a wide range from S.S.W. to E.S.E., the latter group being rather predominant.

The rainfall in Manchester is considerable, partly owing to the cooling effect of the Pennine range on clouds passing over the hills, partly owing to the westerly winds, as they come from the sea, heavily charged with moisture, discharging part of their contents before they reach the hills.

The degree of humidity is, however, for the reason given, high in proportion to the rainfall, and the atmosphere is thus one especially favourable to the cotton industries of Manchester and Salford, Oldham, Stockport, Rochdale, Bury, Bolton, Blackburn and other towns encircled by the Pennines.

The water condensed on the surface of the Pennines forms a pure and palatable drinking water, and the towns on both sides of this range of hills obtain supplies from its gathering grounds.

There is great interference with the transmission of light by the atmosphere of Manchester and Salford, as shown by a comparison of the number of hours of sunshine enjoyed here with the number enjoyed at Stonyhurst.

In the proceedings of the Manchester Field Naturalists'

and Archæologists' Society for the year 1892 is recorded a most comprehensive investigation of the condition of the atmosphere in this city. The amount of sunlight is there measured at a number of stations by its chemical action, and, as the result of numerous observations, it is ascertained that the chief agent in the interception of light is smoke from the burning of coal. It is also concluded that the smoke from house fires does most of the mischief.

The diminution of sunlight in passing through the atmosphere is greatly intensified by the numerous fogs which beset part of the city.

In 1804 to 1810 there were 24 fogs, in 1825–27 there were 49 fogs, in the two years 1900—1901 there were 52.

It is but proper to add that so far as smoke is dependent on the chimneys of works the Manchester Corporation has strenuously endeavoured to reduce it to the smallest possible dimensions.

The atmospheric temperature in the shade shows the characters to be expected from the position of the town.

The daily and annual changes are moderate in amount, although in dry seasons the summer temperature attains a considerable height.

The meteorological data are collected in the succinct tables on following page.

That meteorological and telluric conditions exercise an immense and immediate influence on health is conclusively shown by the great variations manifest throughout the country in the annual death-rate, variations affecting nearly all districts in the same direction, while the disastrous effects of dense fogs are equally in evidence. That the natural conditions of climate and soil in and around Manchester and Salford have no deleterious effects in themselves may be inferred from the remarkably low death-rates of some districts in and near these centres.

Yet they share with Liverpool the distinction of having the highest death-rates of all our great towns.

The causes of this persistent high death-rate, and what it signifies, will best be understood by a short account of the history of Manchester and Salford, in so far as this is necessary for our purpose.

In 1773 the population of Manchester township was 22,481; in 1788 it was 42,821; in 1837 it was 168,911; in 1851, 186,986; in 1861, 185,410; in 1871, 173,988; in 1881, 148,794; in 1891, 145,100; in 1901, 132,316.

In 1801 the population of Salford was 18,525; in 1811 it was 25,438; in 1821, 33,647; in 1831, 52,366; in 1841, 69,727; in 1851, 87,523; in 1861, 105,334; in 1871, 124,801; in 1881, 176,233; in 1891, 198,139; in 1901, 220,747.

In 1773 Manchester and Salford was a very small town, little more than a village, on the banks of the Irwell, and beyond the Cathedral were green fields. The prevailing industry then was weaving, and from that time onward the chief industry until a comparatively recent period was spinning and weaving, first of woollen, subsequently of cotton goods. As usual in old towns, the poorer houses were gathered round courts, with the privies in the centre, and as the population developed towards Deansgate and Ancoats the old fashion prevailed. The development of Hulme occurred later, chiefly about 60 years ago, and the same overcrowding of houses on area and restriction of space behind the houses continued. Had these spaces been left open at the ends, Hulme would have shown an advance on the older districts. But the narrow slits between the rows of houses were in a large number of instances blocked by buildings at the ends of the row.

The district of Hulme was, however, mainly residential, while in Ancoats factories loomed over the dwellings, and intercepted both light and movement of air.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Twelve Months.
Average Annual Temperature, 10 years ...	39·3	39.9	42·1	47·8	52·2	59·0	61·5	60·8	56·4	49·7	45.2	41·4	(Mean.) 49·6
Average Annual Range of Temperature, 10 years	7·3	9·0	11·1	13·6	14·7	14·7	14·2	12·4	11·9	10·2	7·9	7·8	(Mean.) 11·2
Humidity per cent., 10 years	87	86	83	76	71	72	73	76	80	84	85	86	(Mean.) 80
Average Annual Rainfall, 10 years ...	2·746	2·535	2·219	1·931	1·965	2·822	3·020	3·496	2·825	3·621	2·637	3·757	(Sum.) 35·574
Average Annual Am'nt of Sunshine, 10 years	11·96	35·59	85·19	132·44	172·59	164·92	165·67	133·80	102·41	56·49	21·33	6·69	(Sum.) 1089·08
Average Annual Am'nt of Sunshine at Stonyhurst, 10 years ...	36·35	59·77	115·21	164·61	207·70	202·06	197·47	155·13	127·52	96·55	44·07	24·94	(Sum.) 1431·38

Thus the rapidly-developing Manchester was, at first, and for long, a replica of the old bad conditions, houses jammed together, and privy middens at the back door.

In comparing the statistics of old and new Manchester, we must take care that we are comparing the same things. The city was incorporated in 1838, but the incorporated city is not the Manchester of the Registrar General, which was restricted to the Manchester township.

The populations already given refer to the Manchester township.

If we take Manchester City as incorporated, we find that we must take into account the gradual removal of the sick poor to Crumpsall Workhouse, which was then outside the boundary, and that we must make an allowance for deaths in the public institutions not belonging to Manchester, deaths which are now referred to the districts to which they belong.

When we do this, we find that the populations were in 1861, 337,841; in 1871, 348,683; in 1881, 333,457; in 1891, 341,299, and in 1901, 335,979. The death-rates were in 1868–72, 29·55 per 1,000 living; in 1897–1901, 23·04.

It is not so easy to make the necessary allowances for the Manchester Township, that is to say, for the old and central portion of the city. We may, however, fairly compare the death-rates (deaths undistributed) from 1840 to 1860 with those holding (deaths distributed) during the years 1892 to 1901. We thus get the following table:—

Death-rates in the Manchester Township.

1838–40,	1841–50,	1851–60,	1891–1900,
35·8.	33·3.	31·6.	29·6.

If we consider how different is the relation in which Central Manchester now stands to the surrounding popula-

Photo by F. Ireland. *Manchester.*

MANCHESTER ROYAL EXCHANGE.

Photo by F. Ireland. *Manchester.*

London Road Station.

Photo by F. Ireland, *Manchester.*

Reform Club, King Street.

Photo by A. E. Bradburn, *Manchester.*

QUEEN'S PARK, FLOWER GARDEN AND MUSEUM.

Photo by A. E. Bradburn, *Manchester.*

PHILIPS PARK, FLOWER GARDEN.

tion from that which it had in 1840, we must regard these figures as showing very great progress.

The City of Manchester has thrice been extended, in 1885, 1890, and 1904. The population of the extended city was at the last Census 606,824; at the previous Census the figures were 505,368, but these figures by no means express the real increase of the population. An increasing proportion of those working within Manchester and Salford now live beyond their borders. Yet substantial progress is shown in the sanitary condition of the inhabitants, the mean death-rate in 1881–91 being 24·25; in 1891–1900, 23·27, progress which is greater than it seems if we take into account the increasing proportion of the population living outside the boundary.

The facts for Salford are similar. The population at the last Census was 220,747, and at the previous Census 198,139. The mean death-rate in 1851–1860 was 26·2; in 1891–1900, 23·9.

The great reduction which has taken place in infectious diseases may be gathered from the figures on following page, showing the average annual number of deaths from smallpox, scarlet fever, and fever (typhus and enteric):—

From an analysis of the causes of the high death-rate of Manchester and Salford for the years 1894 and 1895, as compared with England and Wales and with London, we find that the most conspicuous excess in the death-rates falls under the head pneumonia and bronchitis, while there is also an excessively high death-rate from summer diarrhœa. The death-rate from pneumonia and bronchitis has been ascribed to atmospheric conditions, and a comparison has been instituted with the high death-rate from this cause in Glasgow. But the parallel holds equally for the zymotic death-rate; in fact, the death-rate from chest diseases is partly zymotic. That it does not own an

	1868-70		1871-75		1876-80		1881-85		1886-90		1891-95		1896-1900	
	Manchester.	Salford.	Manchester.	Salford.	Manchester.	Salford.	Manchester, Beswick added.	Salford.	Manchester City extended.	Salford.	Manchester City further greatly extnd.	Salford.	Manchester.	Salford.
Small Pox ...	37	21	66·4	62	40	88	13·2	5	7·8	2	14·8	5	0	0·2
Fever	477	180	224·2	99	132·2	99	84·6	71	129·6	91	131·2	82	101·2	72
Scarlet Fever ...	676	222	377·2	134	331·6	193	166·4	91	264·4	146	136·4	72	107·6	75

atmospheric cause in the main is proved by the high death-rates from chest diseases in Manchester and Salford as compared with those obtaining in London, and a comparative examination of the sub-districts goes to prove the same thing. This death-rate must be ascribed very largely to organic pollution.

To what must we ascribe the high general death-rate prevailing in Manchester and Salford? In the opinion of the writers this is due mainly to the following causes:—

1. To the crowding of houses on area, and their defective arrangement in past times. This is especially notable in the Manchester Townships, Hulme and Greengate.
2. To the conservancy system of storing excreta. Admittedly requisite in the past, it is now a serious bar to an improved state of health.
3. To the consumption of young life by the industries of these towns in the past, and to a less extent in the present, and to irregular and ill-paid labour.
4. To the ignorance of the industrial female population in all that pertains to children.

From the above figures it is evident that very great progress has been achieved. In what has this consisted? Amongst the most notable causes are these:—

Higher wages and more steady employment. Mutual assurance. Reduction of the hours of labour, and advance of the age of child labour. Cheaper food and clothing.

Better conditions of housing under recent building bye-laws. Improved water supply from Longdendale 1848 to 1884, Thirlmere 1886 to 1894.

Conversion of middens to pails in the City of Manchester, as then constituted, 1872 to 1880.

Improvements effected by the Unhealthy Dwellings Sub-Committee, 1885 to 1901, and by the growth of the city.

The completion of a main drainage scheme.

The operations of the Manchester and Salford Acts from 1844, and of the Public Health Acts, especially of the Act of 1875.

The institution of Public Parks. Manchester and Salford inaugurated the possession of Public Parks by municipalities in 1846. These lie on the outer fringe, and will prove of immense service in the future.

Provision for the treatment of fevers in Monsall and Ladywell Hospitals, and for public disinfection at the Cleansing Depôts in Oldham Road.

Voluntary effort and popular education by the Manchester and Salford Sanitary Association and by the Ladies' Health Society. Education by the Corporations.

Further progress may be confidently looked for, the more pressing needs being the improvement of housing, the reduction of drinking, economy in food, and education in the means necessary to save infant life and to care for the young. In other directions satisfactory progress is being made.

Objects of interest are:—

1. The Manchester Waterworks.
2. Monsall Hospital and Clayton Vale Temporary Hospital.
3. The Sanitary Committee's dwellings and Walton House. Improvements by conversion of back-to-back dwellings.
4. The Sewage Works at Davyhulme.

5. The Cleansing Yard, Holt Town.
6. Chat Moss and Carrington Moss.
7. The Public Abattoir and Cold-Air Stores, Water Street.
8. The Foreign Animals Wharf and Lairage.
9. The Market, Shudehill.
10. Boggart Hole Clough and Heaton Park.
11. The Pure Milk Supply, Old Trafford.
12. The Southern Cemetery and the Crematorium adjoining.
13. Ladywell Sanatorium.
14. Drinkwater Park Temporary Hospital.
15. Artisans' Dwellings and Corporation Lodging house, Salford.
16. Peel Park.

CHAPTER V.

THE DEVELOPMENT OF THE MUNICIPAL LAW OF MANCHESTER.

By THOMAS HUDSON, *Deputy Town Clerk, City of Manchester.*

The Manchester Corporation, on its creation by Royal Charter in 1838, succeeded to the statutory powers and duties of the previously existing Police and Improvement Commissioners, the first of whose Acts of Parliament was obtained in 1776. These powers and duties related to the ordinary purposes of local government and to the management and extension of the Gasworks, which have been in the hands of the local authority from the first introduction of gas as an illuminant in the year 1805. Since 1838, by means of some sixty-four statutes, great expansions have taken place in the powers for sanitary, police, highways and improvement purposes and for the promotion of the public health. In 1846 an Act was passed dealing with the Town Markets, which, with the manorial rights, were then purchased by the Corporation from the lord of the manor. These markets have been considerably enlarged, and new markets, public abattoirs, cold-air stores and a Foreign Animals Wharf provided.

In 1847 the Corporation obtained authority to acquire the undertakings of the Manchester and Salford Waterworks Company, established in 1809; and, under seven Acts of that company and twenty-six passed at the instance of the Corporation, they have constructed or enlarged and are now maintaining the Longdendale Waterworks (with

a storage capacity of 5,985 million gallons), the Thirlmere Lake (capable of impounding 8,135 million gallons), and the necessary aqueducts and mains for the supply of water for domestic and trade purposes in detail to the city and nineteen outside parishes and districts, and in bulk to thirty-three other towns and districts. To the ordinary purposes of water supply has been annexed a special authority to afford hydraulic power on the high-pressure system.

The Corporation's right to supply gas within the borough and neighbourhood was confirmed by an act passed in 1851, the previous Acts, ranging from 1824 to 1839, being superseded. This power has been extensively exercised, the annual make being now nearly 5,400 million cubic feet, distributed within the city and eleven parishes beyond. Upon such power has been engrafted authority to manufacture gas residuals into merchantable commodities.

In 1875 the Corporation were empowered to lay tramways in the city, and, as the Tramways Act, 1870, prohibited a local authority from working them, they were leased to a company for twenty-one years. The lines were extended by virtue of later Acts, and in 1897, in view of the expiry of the company's lease, the Corporation were authorised by Parliament to work and electrically equip the tramways. This enactment has been amplified by subsequent Acts, and, acting under the combined powers, and with the co-operation of seventeen neighbouring local authorities who have leased or granted running powers over their tramways to the Corporations, they are now engaged in completing the construction and electrification of about 200 miles of tramways, which they will work as one undertaking. The system promises to become an important factor in the housing question.

That question has engaged the attention of the Corpora-

tion. They have already, under the Housing Act, 1890, and under local powers, constructed and now own several blocks of tenement dwellings, numerous separate houses and cottages, and a lodging-house for men; and they have recently acquired an estate of 238 acres at the north of the town for a composite scheme of housing and allotments, towards which a first proposal for 203 houses has received official sanction. The accommodation has been and is being provided for the labouring and working classes.

The supply of electric energy for lighting and power has been undertaken by the Corporation with statutory authority, first granted in 1890, and they have taken over the electricity undertakings of seven neighbouring local authorities. For carrying out their obligations in this connection the Corporation have constructed three generating works, and about 20 transforming stations.

For the mental and moral culture of the people, their physical development, and their rational amusement and recreation there have been provided four Art Galleries; a Central Library, with nineteen branch establishments, possessing together about 300,000 volumes; a School of Technology, with subsidiary institutions, including a separate School of Art; 93 Provided and 86 Non-provided Schools, 12 Public Baths, and 50 Public Parks and Recreation Grounds having an aggregate area of 484 acres, exclusive of Heaton Park, of 650 acres, which was purchased by the Corporation in 1902.

As the Burial Board, under an Act of 1857, the Corporation have provided and manage two extensive Cemeteries.

In virtue of local enactments the Corporation, and more especially the Lord Mayor, take charge of and administer many local charities; and they assist, by representation, in the management of several educational institutions—*e.g.*, the Manchester University, the Manchester Museum, the

Manchester Grammar School, the Manchester High School for Girls, the Hulme's Charity and the Whitworth Institute.

In relations with the geographical county of Lancaster and the Hundred of Salford as to county rates, the provision of courts of justice, lunatic asylums, sea fisheries, rivers pollution prevention, the sanitary regulation of the port of Manchester and cognate matters, the Corporation are associated with and represented upon joint Boards and Committees; and in the important matter of sewage disposal they have diverted the crude sewage from the rivers and streams, and are now engaged in extensive works for its treatment on the bacterial system.

Nor have the Corporation neglected the commercial interests of the district of which Manchester is the centre, for under two Acts of Parliament, obtained in 1891 and 1893, they came to the assistance of the undertaking known as the Manchester Ship Canal by providing five millions sterling to enable that great work to be completed. This was done with the full concurrence of the ratepayers, and, by common consent, has redounded to the welfare and prosperity of the community. By reason of this financial assistance the Corporation are entitled to, and exercise under statutory authority, a preponderating vote on the Board of Directors.

Manchester was created a bishoprie in 1847, a city in 1853, and the seat of the Victoria University in 1880; it possesses its own Quarter Sessions and Commission of the Peace, and in 1893 the title of Lord Mayor was conferred upon the chief magistrate. Prior to 1885 the area was 4,293 acres. In that year Parliament added the districts of Harpurhey, Bradford and Rusholme, raising the area to 5,933 acres; in 1890 the districts of Crumpsall, Newton Heath, Openshaw, Blackley, Moston, Kirkmanshulme, Clayton, and part of Gorton were added, the area becoming

12,935 acres; in 1903 part of Prestwich was added, and in 1904 the townships of Burnage, Chorlton-cum-Hardy, Didsbury, Moss Side and Withington were added. These additions increased the area to 19,803 acres. The local laws apply to this extended city area, which in 1906 had a population of 637,126 and a rateable value of £4,139,619. It is surrounded on all sides by thickly-populated boroughs and urban districts which are separately governed. The adjoining county borough of Salford, with a population in 1906 of 234,077 and a rateable value of £1,012,192, has its own local Acts.

CHAPTER VI.

MODERN MANCHESTER.

By CHARLES W. SUTTON, M.A.

I.—Some Principal Streets.

The first great change in the streets of central Manchester was the Market Street improvement, begun in 1821. From that time forward there have been gradual alterations in other old streets and constant creations of new ones, so that the green spaces have been filled up between the old town and the surrounding townships and hamlets, such as Ardwick, Rusholme, Harpurhey and Broughton. During the first half of the nineteenth century hundreds of cottages for the artizans of Ancoats, Hulme and other seats of the cotton, chemical and engineering industries were run up without proper sanitary supervision. These groups and rows of dwellings have now, many of them, become noxious slums; while others of them have been swept away by railway works or by the Corporation, who have been making strenuous efforts to remedy the want of foresight of their predecessors. The alterations in central Manchester have lain chiefly in straightening the building lines of certain streets, and in demolishing old houses and replacing them by public buildings and by banks, insurance offices, warehouses and other business places. Comparatively few new streets have been cut within this area. Victoria Street and Terrace were constructed in the early years of Queen Victoria's reign, when many old houses on

the river front of the Cathedral were razed, partly with the object of providing access to Victoria Railway Station. Corporation Street was formed in 1845, and John Dalton Street shortly afterwards. Portland Street was opened out from David Street to Oxford Street in the fifties. Albert Square was an improvement due to the erection of the Town Hall. Whitworth Street, extending from the lower end of Deansgate to London Road, is a new thoroughfare that was completed in 1899. In the older part of Salford a new street, Blackfriars Road, has been made from Sacred Trinity Church to Broughton Road, giving convenient access to Broughton, both Lower and Higher. Foremost among the improvements of old streets is that of Deansgate, which was begun about 1864, and has resulted in one of the finest thoroughfares in the city. More recently Cateaton Street, Hanging Ditch, and other thoroughfares in their neighbourhood, have been greatly altered.

Of Market Street, the main artery of the city, that to which the chief traffic converges, it must be said that it is not a thoroughfare that a citizen can at present point to with full satisfaction. Some of its buildings on the south side are good specimens of street architecture, but as a whole it is unworthy of its great position. At the foot of Market Street stands its most important building—one of the most important, indeed, in Manchester—the Exchange, with its imposing portico and its noble main room, which has an area of 4,405 square yards. It was opened in 1871, and stands partly on the site of the old Exchange and partly on that of the historic Newall's Buildings, the scene of the meetings of the Anti-Corn Law League. Apart from this and some of the shops there is little else than the constant bustle of traffic, pedestrian and vehicular, to arrest the attention of the visitor.

From the tower corner of the Exchange four short streets are seen—Exchange Street, St. Mary's Gate, Victoria Street and Market Place. Exchange Street and its continuation, St. Ann's Square, contain some notable shops (pictures, books, jewels and silverware, ladies' dresses and milinery, etc.), and form the chief fashionable promenade on certain days of the week. The statue of Richard Cobden stands amid the cabs in the centre of St. Ann's Square. St. Mary's Gate has its fine shops, and leads to Blackfriars Bridge. One side of St. Mary's Gate is taken up by Victoria Buildings, built and owned by the Corporation. Another side of the same structure is in Victoria Street, at the bottom of which the Cromwell statue is seen, and beyond the statue is the Exchange Station. Near the corner of Cateaton Street a part of the masonry of the ancient Hanging Bridge was uncovered a few years ago. The Cathedral is the most prominent building at this point, and a little further on may be observed the unobtrusive entrance to Chetham's Hospital, mentioned elsewhere. In Market Place there lingers one of the ancient houses of which there were so many hereabouts less than a century ago. It is only within very recent years that the flower and fruit stalls which formerly lined each side of the roadway, and lent much picturesqueness and colour to the scene, were cleared away.

Taking the roads that branch off Market Street, we come first, on the left, to Corporation Street, going down which we reach the quarter taken up by the wholesale provision traders, who occupy the major part of the warehouses about Hyde's Cross—Hanging Ditch, Fennel Street, Withy Grove, etc. Close by are the great buildings of the new Corn Exchange. The Wholesale Co-operative Society have their immense business premises in the vicinity. In Long Millgate, near the entrance to Victoria Station, will be found the Manchester Grammar School.

Returning to and crossing Market Street we enter Cross Street, and observe, opposite the main entrance to the Exchange, the handsome terra-cotta buildings of the "Manchester Guardian" office. Further on, past Haworth's Buildings, is Cross Street Chapel, the oldest Nonconformist meeting-house, erected in 1694. The Conservative Club and Free Reference Library are both built up to this street, but neither has its entrance here.

In Pall Mall the new building of the Stock Exchange was opened in December, 1906.

In Spring Gardens and Brown Street, off Market Street, is the General Post Office, the busiest provincial post office in the kingdom. It was opened in 1884 (being built over the site of the old one), and covers 3,334 square yards.

The offices of the Trade Protection Society are in Fountain Street, opposite which street is High Street, the seat and centre of the older home-trade warehouses. Near the bottom, and before coming to Shudehill, is New High Street, leading to Smithfield Market.

Piccadilly is a continuation of Market Street. Here stands one of Manchester's main landmarks, the Royal Infirmary, honoured for its long and useful career as the chief hospital in South Lancashire. Its fine, open situation distinguishes it from other public buildings in the city, which, with one or two exceptions, are in positions so cramped and confined that their architectural merits or demerits are hidden. On the Infirmary flags are several statues—Sir Robert Peel, the Duke of Wellington, John Dalton, James Watt, and, lastly, Onslow Ford's seated figure of Queen Victoria, erected as a memorial of her Jubilee and unveiled in 1901. Public opinion on this statue as a work of art is much divided, it having been severely and adversely criticised and as warmly defended. Opposite the Infirmary is Oldham Street, in which is situ-

ated the Central Hall, the centre of the strenuous activity of the Wesleyan Methodist Church in Manchester.

At the junction of Market Street and Piccadilly is Mosley Street, in which are situated the Portico Library, the City Art Gallery, the Union, Brasenose and Clarendon Clubs, one or two large banks, and, at the end, is the site of St. Peter's Church, which was removed in 1906–7. Behind the Portico, in George Street, is the home of the Literary and Philosophical Society; and at the back of the Art Gallery there stands the Athenæum, one of the most useful and popular of local institutions.

Portland Street begins on the south side of the Infirmary, and contains many great warehouses. A large number of home-trade and shipping firms have during the last generation adopted this part of the city as their head-quarters, and warehouses abound in all the off-lying streets. The public buildings in this neighbourhood are the City Police Courts in Minshull Street, the Municipal School of Technology in Sackville Street, the Central Secondary School in Whitworth Street and the new Central Fire Station and Coroner's Court in London Road.

It will be convenient now to take a rapid survey of Deansgate and Peter Street, and then mention several of the streets leading therefrom. Deansgate makes a good start opposite the Cathedral, with the Victoria Hotel on one side and the Grosvenor on the other. Beyond St. Mary's Gate we come to Exchange and Barton Arcades, and on the opposite side to the Deansgate Arcade, leading to St. Mary's Churchyard, in the centre of which St. Mary's Church stood until 1890. The space is now laid out with walks and plantations, and, being furnished with seats, has become a pleasant place of rest—at least it is so on fine summer days.

Passing numerous fine shops, we come to the John

Rylands Library, a building remarkable in many ways, but whose external proportions and beauties it is almost impossible to appreciate on account of its unfortunate situation. Farther on we have the Religious Institute, the Education Offices, the Inland Revenue Offices, offices of the District Provident Society and the Band of Hope, the Deansgate Branch Free Library, and the immense buildings connected with the Great Northern Railway Station. Near this spot is the site of Roman Manchester, of which settlement only a shapeless mass of brick wall under a railway arch of the Altrincham line is visible. The Knott Mill Railway Station is at the end of Deansgate, which then becomes Chester Road, and leads to the old Bridgewater Canal and the new Ship Canal.

Turning into Peter Street from Deansgate, we see the Great Northern Railway Offices, some good warehouses (that of Ralli Brothers especially), two music halls, the Theatre Royal and the Gaiety Theatre, the Young Men's Christian Association Hall, and the Free Trade Hall, opened in 1856 to commemorate the victory of the Anti-Corn Law League. It has been the scene of many remarkable political and social meetings, and of the historical concerts so long conducted by Sir Charles Hallè and now continued with equal brilliance by Dr. Hans Richter. At the corner of Lower Mosley Street there used to stand the Gentleman's Concert Hall, but it has been pulled down to make way for the Midland Grand Hotel.

Leaving Peter Street by way of Mount Street, we pass the Friends' Meeting House and reach Albert Square, one side of which is taken up by the principal façade of the Town Hall, a monument of Mr. Alfred Waterhouse's architectural genius as well as of municipal enterprise. Not all the tall buildings that form the other three sides of the square are to be praised for their architectural beauty,

Photo by R. Banks. *Manchester.*

THE REFERENCE LIBRARY, KING STREET.

Photo by R. Banks, Manchester.

INTERIOR OF THE REFERENCE LIBRARY, KING STREET.


Hedley Fitton

By permission of J. H. Reynolds, M.Sc.

MANCHESTER MUNICIPAL SCHOOL OF ART.

though some are more than passable. Mr. Redmayne's Scottish Widows' Fund building at the corner of Mount Street is perhaps one of the most satisfactory. The Memorial Hall, erected in 1864-6 in commemoration of the ejected Nonconformist ministers of 1662, stands at the corner of South Street. The Arts Club has its quarters in the adjoining building. The Prince Albert Memorial in the centre of the square was unveiled in 1867. The statue was the gift of Mrs. Goadsby, and the canopy was erected by public subscription. The square is decorated also by statues of Bishop Fraser, John Bright, W. E. Gladstone and Oliver Heywood.

The upper part of King Street is the Lombard Street of Manchester, for here banks and insurance offices abound, all of them costly and some of them very fine buildings. The student of architecture may find a considerable variety of styles in this one short street. At the top is the Reform Club, and at the corner of Cross Street is the Free Reference Library, of which some particulars will be found in another part of this volume. The lower part of King Street contains some of the best shops in the city. Others equally good will be found in the neighbouring St. Ann's Street, where the Conservative Club is, as well as St. Ann's Church. The church should be entered for the purpose of seeing Mr. F. J. Shield's beautiful windows.

Oxford Street is somewhat out of the centre, but cannot be omitted. It starts at St. Peter's Square, near which is the Prince's Theatre. Further down are the Hippodrome, St. James's Hall, St. James's Theatre and the Palace Theatre of Varieties, also the fine, boldly-designed warehouse of Messrs. Tootal Broadhurst, Lee and Co. Close to Oxford Road Station is one of Mr. Waterhouse's latest works, the new St. Mary's Hospital, and, on the other side of the street, the Refuge Insurance Office, another of the

same architect's works. From this point there is nothing noteworthy until All Saints' Church is reached. Places of worship of several denominations are hereabout, including Cavendish Chapel with its fine spire. But the most interesting building here is the Municipal School of Art, with an Art Museum that is well worth a visit. Proceeding up the road, we arrive at the great buildings of the Manchester University, then the Girls' High School (Dover Street), the Church of the Holy Name, the Eye Hospital, the Union Chapel (Dr. Maclaren's), and Whitworth Park and Museum, and the new Infirmary buildings, on which the workmen are busily engaged, as they will be for several years, and on through Rusholme to Fallowfield, Withington, Didsbury, etc.

Of the main streets leading out of Manchester the following may be named:—Chester Road, leading to Old Trafford, Stretford and Cheshire; City Road and Stretford Road, leading to the same and to Whalley Range, Moss Side and Alexandra Park; London Road, to Ardwick Green, where it divides, one road going to Longsight, Levenshulme, Heaton Chapel and Stockport, and the other past Belle Vue Gardens to Gorton, Hyde, etc.; Fairfield Street, to Openshaw, Fairfield, Ashton-under-Lyne, etc.; Great Ancoats Street, past the Art Museum, to Bradford, Clayton, etc.; Oldham Road, to Newton Heath and Oldham; Rochdale Road, to Blackley, Middleton and Rochdale; Cheetham Hill Road, to Heaton Park, Whitefield and Bury; Great Ducie Street (Strangeways), past the Assize Courts and Gaol, to Higher Broughton, Kersal, Prestwich, etc.; Blackfriars Road (Salford), to Broughton and the race course; Chapel Street (Salford), to Peel Park, Irlams-o'th'-Height, Eccles, Swinton, etc.

It may be stated, in conclusion, that the length of streets in Manchester alone is 749 miles.

II.—The Corporation and its Work.

The Manchester City Council consists of one hundred and twenty-four members, thirty-one of whom are aldermen. They divide themselves, for the administration of the affairs of the municipality, into nineteen standing committees and several special committees. The nature and extent of the operations of the Corporation may be seen by a summary of the duties undertaken by each committee.

The Art Gallery Committee has the control of the City Art Gallery in Mosley Street, formerly the Royal Institution, conveyed to the city in 1882, when it was agreed that the Corporation should expend not less than £2,000 a year for twenty years on the acquisition of pictures for the permanent collection. It has recently undertaken the management of the Queen's Park Art Gallery and has opened a branch gallery at Heaton Park.

The Baths and Wash-houses Committee has charge of twelve sets of public baths. In 1906 the number of bathers was 1,395,744.

The Cleansing Department has the onerous duty of keeping the streets clean and disposing of refuse, consisting of night-soil, street sweepings, market, slaughter-house and trading refuse. It owns 1,101 acres of land on the Carrington Moss estate (now completely reclaimed) and 2,580 acres at Chat Moss (partially reclaimed). It makes annually, 4,400 tons of concentrated manure, besides oil, soap, tallow and mortar, and has workshops where implements, vans, railway trucks, brushes, machines, etc., are made. Refuse which cannot be utilized is burned in destructors. The receipts from the sale of refuse amounts to above £52,000 a year. The number of employés is about 1,900, and the amount paid in wages is £124,000 annually.

The Education Committee.—The operations of this Committee are dealt with in a subsequent chapter.

The Electricity Committee has three large distributing stations—one in Dickinson Street, off Portland Street, which began operations in 1893, and the others in Stuart Street, Bradford, and Bloom Street. It supplies the current for the Corporation tramcars, as well as to 6,340 consumers. The extent of the area in which mains are at present laid is about twenty-two square miles, but Parliamentary powers have been obtained to supply throughout the city area and by agreement in adjacent districts.

The Finance Committee controls the Treasurer's Department, the work of which is highly organized, as befits a department having the collection and payment of the city rate (now amounting to over a million a year), and the control of the Corporation stock, mortgages, annuities and other matters referring to the raising of loans and the provision of sinking funds. The Committee has sundry other duties, *e.g.*, the distribution of the Lord Mayor's charities and other charities under the control of the Council (£3,700 a year), financial arrangements between H.M.'s Exchequer and the city, matters connected with the Lancashire Lunatic Asylums Act, and the nomination of overseers for the several townships into which the city is divided.

The Gas Committee provides for the supply of gas to an area much beyond the bounds of the city. It has 140,724 private gas consumers within the city and 19,389 outside. It lights 17,831 street lamps. There are 108,107 ordinary meters and 52,006 automatic meters in use, besides 29,760 gas-cookers and stoves, which are hired out by the Committee. The supply of gas has been in public hands since 1824, and the authorities have always been able to

hand over a substantial sum of profits annually to the relief of the rates.

The Improvement and Buildings Committee is sufficiently described by its title. Several large improvement schemes are in progress or under consideration; and the examination of plans for new streets and buildings and the care for dangerous buildings keep the officials in constant employment.

The Libraries Committee.—See Chapter VIII.

The Markets Committee.—The markets became the property of the Corporation by purchase of the manorial rights in 1846. The purchase money, £200,000, has now all been paid off, and the Committee has contributed out of their profits a considerable sum annually for the reduction of the city rates. The fruit and vegetable markets are now the largest in the country, with the possible exception of London. There are fish and poultry markets in New High Street, abattoirs in Water Street, a foreign animals wharf at the Ship Canal docks, cold-air stores in Hulme, and sundry other markets for clothes, live poultry, hay and straw, horses, pigs, etc.

The Parks and Cemeteries Committee.—See Chapter VII. for particulars of the parks. There are two cemeteries in Manchester, one near Philips Park and the other at Chorlton-cum-Hardy.

The Paving, Sewering and Highways Committee has under its charge the paving, flagging and repairing of all streets, roads and passages in the city, and the making, repairing and cleansing of all sewers; also naming of streets and numbering of houses.

The Rivers Committee, in addition to carrying out the provisions of Acts relating to the rivers, has charge of the works in connection with the Manchester main drainage scheme for the disposal of effluent sewage, etc., of the city.

This great and costly scheme has been described in extensive reports published by the Committee. Its distinctive features are the bacteria beds at Davyhulme.

The Sanitary Committee has the all-important duty of attending to the health of the city, and among its multifarious operations may be mentioned the provision of blocks of labourers' dwellings, a large lodging-house for 363 men, workmen's cottages on an estate at Blackley, infectious diseases hospitals and public lavatories. It also superintends the drainage of houses and attends to the inspection of food, smoke, canal boats, factories, workshops and shops, and the various Acts referring to those matters. (See also Chapter IV.).

The Town Hall Committee has not only the care of the Town Hall (to describe which building would take up too much space here), but also of the city police courts and eleven district public halls, besides many public clocks and drinking fountains throughout the city. Under this Committee are the officials of the City Courts, the Town Clerk's, City Surveyor's, and Medical Officer of Health's Departments; in addition to other sundry other officials, such as the City Organist, Stationery and Printing Manager, etc.

The Tramways Committee.—Until recently the whole tramway service was in the hands of a private company. On the expiration of the company's lease of the lines the Corporation resolved to assume the responsibility of running electric cars throughout the city, and to the suburbs where arrangements could be made with the authorities. The first Corporation electric cars were run on June 7th, 1901. The length of the tramways worked by the Committee is 158½ miles of single track, of which 110 miles are within the city.

The Watch Committee, in addition to the management

of the police force (1,000 men), has control of the Fire Brigade and the Weights and Measures Department. In its hands there also rest a multitude of duties connected with the licensing of theatres, music halls, hackney coaches, hawkers, juvenile street hawkers, brokers, etc.

The Waterworks Committee. (See Chapter XIII.).

The Special Committees of the Corporation include those for Manchester Ship Canal (see Chapter XIV.), Telephones, the Withington District, and several of a temporary character. The work of the members of the Corporation does not end with their duties on the several committees, but includes representation on many important joint boards and committees, such as the Ship Canal Directorate, Sea Fisheries, Mersey and Irwell, County Rate, Lancashire Asylums, Inebriate Acts Board, Manchester University, Grammar School, etc.

The Salford Corporation consists of sixteen aldermen and forty-eight councillors. There are nineteen committees engaged in duties similar in many respects to those of the Manchester Corporation. It must suffice to mention among Salford's public works the fine Technical School, the Museums and Libraries, the Public Parks and Baths, the immense Cattle Market, the Electric Works, and the excellent Tramway Service.

III.—The Railway Stations.

"A History of the Manchester Railways" is the title of a little book by Mr. William Harrison, published anonymously twenty years ago, a new edition of which would be a useful contribution to the literature of railway communication. It is a subject much too complicated for treatment in a handbook such as the present one. It has already been mentioned that the *first* railway station in the country is still in existence in Manchester, though not

now used for its original purpose. The principal stations now in use are as follows:—1. *London Road*, originally erected in 1842, rebuilt 1881, and since enlarged. It is owned by the London and North-Western and Great Central Companies, and in addition to their trains those of the Great Northern come into it. 2. *Victoria*, opened on January 1st, 1844, was at that time the largest railway station in the country. It has since been greatly extended, and is now in process of further development. It is the property of the Lancashire and Yorkshire Railway Company. It is used also by the Midland Company. 3. *Oxford Road* is a small station for the Altrincham line, and for certain London and North-Western trains to Chester, etc. 4. The *Central* Station was opened in 1877, and is the starting-place of the Cheshire Lines and of many of the Great Central and Midland and some of the Great Northern trains. The Midland Company have erected a large hotel near the entrance to this station. 5. The *Exchange* Station was opened in 1884 by the London and North-Western Company. They had previously used a portion of the Victoria Station for their traffic to the North. 6. The *Deansgate* Station was erected by the Great Northern Company, and was opened in 1898. It is used for goods traffic only.

CHAPTER VII.

MANCHESTER PARKS AND RECREATION GROUNDS.

By Alderman WILLIAM BIRKBECK, *Chairman of the Parks Committee, Manchester Corporation.*

Up to the year 1880 Manchester had remained practically stationary for a long time in the matter of providing parks and open spaces for the citizens. At that time Manchester possessed four parks but no "open spaces," and two of the parks had been subscribed for by the public and presented to the city. During the next ten years one park—Cheetham Park, of 5 acres—and eight open spaces were provided, the area of the open spaces being about 40 acres in all, one of them alone, Birchfields, Rusholme, containing 32 acres, while the rest averaged little more than one acre each, so that in the year 1890 Manchester had five parks and eight open spaces covering an area of about 160 acres. During the following ten years Manchester was not behind other large municipalities in securing for the use of the public parks or open spaces where conveniently situated and where the price was considered reasonable, so that at the opening of the twentieth century the city had nine parks and thirty open spaces, containing together an area of over 400 acres, or more than double the area of the previous ten years.

After entering upon the new century the Corporation continued to add to the number of its parks and open spaces. The most important purchase of all being that of Heaton Park, comprising 650 acres, with the ancient mansion and other property on the estate, together with

43 acres of land adjoining the park, the whole being transferred to the Corporation on June 21st, 1902, for the sum of £230,000. This park alone, being much larger than all the rest put together, secures to the city a space great enough for football, cricket, and other games to be indulged in by adults as well as boys. It is also useful for galas, fêtes, military parades and drills, mass meetings, etc. The fine mansion, standing in the centre of the park, has been put to very useful purposes: one portion has been placed under the control of the Art Gallery Committee and furnished with pictures, statuary, and other objects of art, forming a great and highly appreciated attraction to visitors to the park. Tea-rooms, shelters, bandstand, and every convenience for large crowds have been provided. The citizens greatly appreciate this latest and largest addition to the number of their parks.

There have also been secured three open spaces in the district of Newton Heath by arrangement with the Dean and Canons, making together about 20 acres.

The amalgamation of Withington with the City brought in eight more open spaces conveniently placed in the large area comprising that township.

Philips' Park came into the possession of the Corporation by way of gift in the year 1846, and the jubilee was duly celebrated in the year 1896 by the erection of a drinking fountain subscribed for in the district of Bradford and Clayton, where this park is situated. The population of this district is wholly of a working-class character, and is estimated at about 43,000. Iron and chemical works abound in the locality, polluting the atmosphere with noxious vapours and smoke, which greatly militate against the vegetation, but by constant attention we have arrived at fairly satisfactory results. The area of the park is $31\frac{1}{2}$ acres. It is undulating and beautifully laid out. There are two small plots of grass reserved for play-grounds for children and a series of ornamental lakes, the remaining portion of the park being devoted to grass lawns, flower gardening, ornamental shrubberies and woodland. This

park is specially noted for its fine display of tulips in the spring, and presents a beautiful sight to the thousands who visit it each season. Over 100,000 tulips may be seen in full bloom at once, and the public from all over the city and beyond are attracted to the park during this show. There are three entrances; two principal ones have handsome lodges for the park-keeper and head-gardener. The walks are asphalted throughout the park. In the centre of the park is a refreshment-house with convenience for residence. There are also provided in this park greenhouses, bandstands, two bowling greens, tennis courts, separate gymnasia for boys and girls, substantial shelters and an ample provision of seats, a fair proportion ticketed "Ladies only." In this park there is a free open-air swimming bath for males, the only open-air swimming bath the Corporation possess. It is 200 feet long and 70 feet wide and varies from 3 ft. 6 in. to 5 ft. 6 in. in depth, with tiled bottom and glazed-brick sides. It has ample room round it for the movement of bathers and is altogether a substantial and durable bath, and is so situated as to be hidden from observation from any part of the park. It cost £3,769 in its construction. During the warm months of summer it is greatly used. Last summer's bathers numbered approximately 43,000.

Queen's Park was opened in the year 1846, and presented to the Corporation at the same time as Philips' Park. It covers an area of 30 acres, and is situated in the district of Harpurhey, about two miles from the Town Hall, and is reached by the Rochdale Road tramcars; and, although at the time the park was opened it was practically in the country, it is now surrounded by a densely populated working-class district numbering over 40,000 people. This park is beautifully laid out, almost wholly ornamental. Three small grass plots are reserved for children to play upon, the remaining portion of the park being devoted to flower garden, grass lawns, ornamental shrubberies, woodland and water, a good portion being taken up with the Museum and Picture Gallery, which institution is now

under the control of the Art Gallery Committee. At week ends and during summer evenings, and especially at holiday times, many thousands pass through the buildings. In this, as in other larger parks, are greenhouses, bandstands, fountains, bowling green, gymnasium (separately for boys and girls), shelters, lakes, refreshment-room, forms in abundance and every convenience for visitors who come for the whole day. The garden portion of the park in front of the Museum is a source of great attraction, and a succession of planting is kept up, so that there is continuous bloom to please the eye of the visitor during summer.

Alexandra Park is distant from the Town Hall about two miles. It is easily reached by the Alexandra Park tramcars, of which there is a good service. The land for this park was purchased by the Corporation in the year 1868 for £24,000, and covers an area of 60 acres. About one-half of the area is open grass sward, reserved for play-ground purposes, including cricket and football for boys up to fourteen years of age, gymnasia for male and female, also bowling green and tennis courts, which are well patronised during the summer months. There is also an ornamental lake stocked with waterfowl, the remainder of the park being devoted to flower-gardening, grass lawns, ornamental shrubberies and woodland. Though the situation is somewhat flat, the art of the landscape gardener has overcome the natural difficulties and produced a really fine park. There are several entrances with substantial and commodious lodges, and a refreshment-room in the centre with a convenient residence. Entering by the main entrance, which is nearest the city, the spacious promenade or terrace, edged on either side with ornamental flower-beds cut in design amongst the handsome lawn-kept turf, is a very pleasant feature of the park. The greenhouses in this park furnish the plants and flowers used for the decoration of the Town Hall and other public institutions in the city as occasion requires. There has lately been added the fine collection of cacti, consisting of upwards of 4,000 plants, presented to the City by the late Mr. Chas. Darrah.

To suitably arrange this collection new greenhouses have been erected, and the plants safely transferred, and the collection is now open to the public every week day, and on Sunday afternoons from 2 to 5 o'clock. The following is a list of the principal trees and shrubs found to do well in the park, viz.: Andromeda caprifolia, Acuba japonica, Acuba viridis, Berberis aristata, Buxus argentes, Common Laurel, Ericas of varieties, Garrya of sorts, Gaultheria of sorts, Hedera of sorts, Hypericum of sorts, Laurestinus, Ligustrum of sorts, Rhododendrons of sorts, Skimia, Ulex, Vinca, Hollies of sorts, Ailantus glandulosa, Alnus, Sorbus, White Beam, Azalea, Betula (Birch), Cerasus (Cherries of sorts), Cornus of sorts, Thorns of varieties, Daphne (Mezereum), Fagus (Beech of sorts), Fraxinus (Common Ash of sorts), Hydrangea of sorts, Hypericum of sorts, Laburnum, Lilac, Lime, Philadelphus, Platana (True Plane), Poplars of varieties, Pyrus of varieties, Rhus, Typhina (Stag's Horn), Ribes (Flowering Currant), Robina (Acacia), Salix (Willows of sorts), Sambucus (Elders of sorts), Snowball (Viburnum), Staphylea colchia, Sycamore, Ulmus (Elm in variety), Viburnum (Guelder Rose), Ledum angustifolia, etc., etc.

Ardwick Green, one of the smaller parks (about five acres), came into the possession of the Corporation in the year 1867. It is a pretty little park, nicely laid out and well kept. It has two circular ponds with waterfowl thereon, and bandstand and shelter combined. The park is surrounded on every side by a vast population, and is perhaps used as much as any other park. It is not large enough to enable any space to be set apart for play, but the promenade and walks are asphalt and spacious. There are grass lawns, flower beds, etc.

Cheetham Park is situated in the district of that name, and is about one and a half miles from the Town Hall, and is easily reached by the Cheetham Hill tramcars. The population of this district is about 38,000, and may be described as the Jewish colony. The area of the park is a little over five acres. The land was purchased from Lord Derby in

1884 for £9,000, and nearly £9,000 more has been spent on the laying of it out. This park, like most of the larger parks, contains greenhouses, bowling green, tennis courts, separate gymnasia for girls and boys, and has its finely kept lawns, borders and flower beds, as well as a spacious play-ground for children.

Crumpsall Park is situated in the district of Crumpsall, one of the out-districts amalgamated with the city in the year 1890. At the time of the amalgamation eight acres of this land were in the possession of the then local authority, and were bought by them for cemetery uses, but proved unsuitable for the purpose. Four acres more land adjoining were purchased by the Corporation in 1892, and the whole twelve acres laid out as a public park at a cost for land and laying-out of £25,000. This park is easily reached by tram or train, and is becoming surrounded by a population of the suburban class numbering now about 12,000, and contains the attractions and facilities for sports and games common to the other parks before mentioned. There is a fine raised promenade or terrace on two sides, dotted with flower vases at intervals, presenting a very pleasing feature of this park.

Gorton Park might be more correctly described as an open space of about 16 acres, three or four acres of which are appropriated for gymnasium, two bowling greens, and enclosed flower bed, having a planted border with a broad walk round it within the railings, the rest being an open play-ground of turf. This land had been agreed for by the district of Gorton previous to the amalgamation with the city in the year 1890. The Corporation paid £20,600 for the land and £8,000 for laying it out. This park is situated in the midst of a dense population of the artizan class, and is reached by tramcar from the city running on the Hyde Road.

Brookdale Park is situated in Newton Heath, and was the former residence of the late John Taylor, J.P., and of his father before him, who built the hall and laid out and

enclosed the park, this being a private park at the time it was purchased by the Corporation. It contains 45 acres, 38 acres of which are within the city boundary and 7 acres in the township of Failsworth, and it cost £26,500. It has been so arranged as to make it suitable for a public park. It is beautifully situated in a district which contains 40,000 of the labouring and working class, and is easily reached from the city by the tramcars on the Oldham Road, or by the Lancashire and Yorkshire Railway Company's branch lines to Ashton-under-Lyne on the one side and Oldham on the other. The hall and other buildings on the estate will ultimately be utilized for the benefit of the public visiting the park.

Crowcroft Park, like Brookdale Park, was a private park at the time it came into the possession of the Corporation. It is situated in the Longsight district, and contains 16½ acres. No purchase money was paid. The lands belong to the Dean and Canons of the Manchester Cathedral, and are leased on a chief rent of £520 per annum. It is now enclosed by railings, and with planted border alongside a broad walk all the way round, the rest of the area being intended for play-ground. This estate contains the old hall and other buildings, all of which, with the exception of the hall, it is intended to demolish and clear away. There is a vast population of the suburban class in the neighbourhood of the park, which is reached from the city by the Stockport tramcar service.

Birchfields Park, 32¼ acres in extent, situated in Rusholme Ward, is distant from the Town Hall about 2¼ miles, and reached by the Fallowefild or Longsight cars. The population of this district is about 20,000. The neighbourhood may be described as a better-class one. The park is laid out in large stretches of well-kept grass sward, with a view to giving the greatest facilities for tennis, cricket, football, bowling, gymnasia, etc. The whole area is surrounded with an ornamental border of trees, shrubs and flowers.

The Lewis Recreation Ground at Blackley is about 19 acres in extent, and is the gift of the David Lewis Trustees. It was puchased by them in 1895, and cost, together with the laying out, £20,838. 13s. 8d., which was defrayed by the above Trustees and the ground handed over to the Corporation complete. It includes gymnasia for males and females, bowling green, lawn tennis ground, bandstand, and a large shelter for children to play in during wet weather. It is enclosed by a substantial unclimbable fence followed by a border of trees and shrubs. This, in turn, is followed by a commodious walk, leaving the whole of the central portion of the ground as a playfield for the children, cricket and football being allowed to boys up to fourteen years of age, and it is largely used during the summer months for this purpose. The gymnasia and bowling green are all used to their fullest capacity during the season. This recreation ground, adjoining Boggart Hole Clough as it does, forms a fine adjunct to the latter, in which play-ground provision is somewhat limited by comparison with its area. The Lewis Recreation Ground therefore relieves the tension in this respect.

For some years past music has been provided in the larger parks and open spaces during the summer months on week-day evenings, as well as on Sunday afternoons, and has become quite an established institution in the City. Programmes for Sunday music are submitted to a musical director, and only such pieces are allowed to be performed as are considered suitable for Sunday.

During the season of 1906, about 60 bands were engaged, 414 performances were given—162 being on Sundays—in sixteen parks and open spaces, and 252 on week-day evenings, in twenty-five parks and open spaces, and the numbers attending the various performances totalled to nearly 2,000,000 persons. The cost of the music for the season, including special bands for Whitweek and Bank Holidays, being £2,640, or about one-sixth of a penny in the £.

The bowling greens in the various parks and open spaces

Photo by H. Jancowski. *Manchester.*

Alexandra Park—The Ornamental Lake with St. Bede's College in the Background.

Photo by R. Banks. *Manchester.*

THE JOHN RYLANDS LIBRARY.

number 20, and during the season 1906 were used by 95,000 bowlers, yielding an income of £805. 8s. 3d.

Tennis Courts are provided in eleven of the parks, and the players in 1906 numbered 27,728, the income being £232. 10s. 6d. Bowling and Tennis together showed an income of £1,037. 18s. 9d.

A small charge of twopence per person is made for hire of bowls each time they use the green, and twopence for each person using the tennis courts. The smaller open spaces generally are situated near to the homes of the people, are enclosed some with unclimbable fencing, others with iron posts at intervals with tie-rods from post to post; a few of them are turf, others are gravel; in some a border is planted round, others are without any planting whatever, and are simply open breathing places for play and promenade. Seats are provided in many of them, as also drinking fountains.

The atmosphere of Manchester is so polluted (more so perhaps than any other city in the kingdom) with smoke, sulphuric acid and other chemical fumes, that a fair amount of foliage and vegetation generally can only be maintained by constant renewals and applications. Under these circumstances the Committee found it very expensive to keep the parks at anything approaching a medium or standard of efficiency in respect to vegetation. They therefore decided to initiate a new departure in municipal progress, viz., to grow their own trees and shrubs, and for that purpose rented a few acres of land from the Cleansing Department of the Corporation as an experiment (the land in question being raw bog, part of an estate purchased by the Cleansing Department for the purpose of using up the town's refuse), and so well has it answered the purpose that the Parks Department have now a nursery of 65 acres all stocked with hundreds of thousands of trees, shrubs and herbaceous plants in various stages of growth coming on in relays for distribution in the parks, etc., as may be required, and also for equipping new parks and recreation

grounds, 24 of which have been laid out during the past 12 years. The number of trees and shrubs supplied for furnishing and renewing purposes last year was 26,800 trees and shrubs and 70,000 herbaceous plants (this does not include the bedding plants mentioned in the remarks on the parks, etc.

A special feature in the nursery is the growing of suitable specimen trees and shrubs in tubs for the purpose of decorating the squares and public buildings (where it is impracticable to plant trees in the city). During the summer months about 1,000 of these are placed in the city, which is the means of refreshing the eye and mind of the thousands of busy toilers whose lot it is to live in the dreary surroundings of bricks and mortar inseparable from city life.

I have already referred to the impurities of the atmosphere of Manchester, and it will readily be understood that the varieties of trees and shrubs which will succeed (in some measure) under these conditions are extremely limited; therefore it is only such varieties that are reared in the Corporation nurseries, viz.:—Poplars of varieties, Elders of varieties, Willows of varieties, Thorns of varieties, Dogwood, Ribies, Loniceras, Ash, Privets of varieties Philadelphus, Rhododendrons of varieties (Cunningham white and blush being the two best varieties for standing the atmosphere of Manchester, and of which we raise thousands from layers), Wegelias, Laburnum, Lime, Sycamore, Birch, Duetzia, Honeysuckle (very good for standing smoke), and the following herbaceous and Alpine plants, viz.:—In varieties: Pyrethrums, Spireas, Solidage, Sweet-williams, Sea Pinks, Saxifrage, Semperviviums, Sedums, Stocks, Veronicas, Asters, Aquilegia, Wallflower, Violas, Pansies, Auricalas, Arabis, Antirrhinums, Campanulas, Canterbury Bells, Chrysanthemums, Carnations, Daisies, Digitalis, Doronicums, Iris, Lupins, Lysimachia, Myosotis, Phlox, Pinks, Primroses, etc.

BOGGART HOLE CLOUGH.

By Alderman JOHN WARD, *Deputy-Chairman of the Parks Committee.*

This park, until the acquisition of the magnificent Heaton Park, was the largest of the many open spaces provided by Manchester's Corporation, and is more than three times the size of Alexandra Park, which covers 60 acres.

It is the most "natural" of our parks, lies on the north side of the city, and is easily approached by the electric tramcars, which, starting from High Street at its junction with Market Street, run past the western entrance, situated about half-way down Valentine Brow, Blackley. Here, entering the fine avenue, which is one of the most striking features of the Clough, the way leads to the fountain, constructed of red sandstone, the gift of the late Alderman George Clay. Local tradition holds that the trees of this avenue were planted by Moffat before he entered upon his life's work as a missionary, and the age of the trees supports the story. Lying north of the avenue are 20 acres of good grass land, much appreciated as a play-ground by children, especially in the hot summer weather; and in a deep depression of the Brow side is the site once famous for large Socialist meetings, vast crowds assembling Sunday after Sunday to listen to the speakers and leaders, who took their stand by the iron pillar fixed on the higher ground.

If the visitor, on reaching the fountain mentioned above, will turn to the left and, passing in front of the refreshment-rooms, ascend the broad walk, keeping his way to the right, he will be enabled to command a striking view of Oliver Clough, which has been maintained in its primitive state. A charming and secluded dell, it has a pleasing appearance of distance which no art need improve. From a point of vantage in this Clough, by looking up a branch ravine the visitor may distinguish the tops of the cottage chimneys belonging to the quaint little village of Charles-

town, a place that has not changed for the last sixty or hundred years, although not more than three miles from the Manchester Town Hall. In this village Sam Bamford, author of "Life of a Radical," etc., lived for many years. During the last year or so, there have been built a few houses leading up to Charlestown, but the village itself is still unaltered. Further on, in an easterly direction and still on the edge of the park, on the site of Booth Hall, and covering much of the land, is now in course of erection a large hospital belonging to the Prestwich Board of Guardians. This hall, with much of the surrounding land, including all the Clough, was purchased by the Oldfield Lane doctor (Dr. Taylor), of widely-extended fame, in 1820. Following the carriage drive, and almost skirting the boundary, the visitor should descend into the main valley to a girder bridge leading to Streetfold Moston. It is interesting to recount that the stones forming this bridge once formed a portion of the walls of the old Bellevue Gaol, Manchester, and it is pleasant to contemplate their change of function. From the bridge in the early morning, looking westwards, a particularly striking view of the main valley is obtainable, the eye dwelling upon the many thousand trees and shrubs with which the sides of the Clough have been planted.

The "Serpentine Walk" should not be overlooked. It skirts the top of the Clough, as well as two well-wooded dingles, and affords, in its length of a mile, many good views of the valley below.

Bird life abounds in this park, in spite of occasional prowlers round the fringe, who now and again shoot the birds. Several owls and kingfishers have been wantonly destroyed. As showing the natural cover afforded by the park, the writer knows of several instances where foxes have made a home in the Clough, living on rabbits, but with a marked preference for fowl. So great were the depredations by Reynard that the neighbouring farmers obtained permission for a "drive" through the woods, and, having stationed the best shots in the most suitable posi-

tions, commenced the work of beating cover. The fox was not found, but in the course of the drive a long-eared owl was shot. This occurred in January, 1902, and the owl had escaped from Woodside Farm in October of last year. It was probably seeking shelter during the severe weather, and it was shot by its former owner, who gave it to the writer. The fox remained at liberty for several weeks, but was finally shot by one of the park men.

No attempt has been made to convert this park into a series of ornamental flower beds; on the contrary, the authorities have retained the features of park life with sylvan rest and forest beauty. The greater number of the trees and shrubs planted here have inconspicuous flowers. Wild plants are fostered, and it is hoped that in a few years many more will be introduced with success. Cone-bearing trees have been tried, but without any satisfactory result, some of them living for a few years and then pining away, owing to the constant pollution of the atmosphere by the smoke and gases of our city and workshops. Hawthorns do very well. The willows are in great variety, and they thrive exceedingly well. The common salix, or palm willow, has given much satisfaction, and begins to show its catkins at Christmas. This year it was at its best about April 20th. The sweet bay-leaved willow also grows well in the Clough, and was flowering about the middle of May. A few London planes have been planted recently, and the Committee hope they will live, and so enlarge the scope of the tree-life in the park. The feeling grows that our parks should as far as possible relinquish the ornamental flower-garden type, and rather proceed on the lines of nature and imitate the *real* parks of the nobility. The Parks Committee are fully alive to this desirable aim, and the public are rapidly coming to the same point of view, as is evidenced by their warm appreciation of Boggart Hole Clough as the first sample in Manchester of the "natural" park.

Good seats are to be found throughout the park, and from the beginning of March to the middle of July "the

soaring lark" and the song thrush, as well as numerous other birds, frequent the glens and leafy avenues and add to the pleasure and rest of the visitor.

Last year (1906) arrangements were made and agreed to that 10 acres more should be added to this already large park. This addition made it much more complete, as we shall then be able to walk along the edge of the Clough from west to east, or from end to end, enabling the visitor to enjoy a view of the whole length of the ravine. This addition will also enable those living at Chain Bar and New Moston as well as St. Mary's Road, to get into the Clough by a much nearer way than going round by Streetfold. This new proposed way, to make it what it ought to be, involves the throwing of two short bridges over two gullies which cross the route. If it were not for the wholesome cry from the ratepayers to keep down expenses, this work would be entered upon at once. An effort to do something will be made before long, and when the work is done, it will find favour in the eyes of all those who pass that way.

CHAPTER VIII.

THE LIBRARIES OF MANCHESTER.

By CHARLES W. SUTTON, M.A.

Few towns are so well endowed with public and semi-public libraries as Manchester. There has been an excellent library, freely open to all, since the year 1656; a scientific library since 1792; a large proprietary library since 1805; a municipal library in Salford since 1850, and one in Manchester since 1852. The important library at Owens College (now the University), was started in the previous year. The latest is in many respects most remarkable of all, the John Rylands Library.

The Chetham Library

was founded by the will of Humphrey Chetham, who, dying in 1653, left directions that the old College House should be purchased, if possible, for the purposes of housing the "poor boys," who were to be benefited by his bounty, and of providing a place for the books that were to be bought for the use of scholars and others well affected to learning, the books to remain as a public library for ever. The books were bought as directed, by three clergymen, Richard Johnson, Master of the Temple; John Tilsley, minister of Dean, and Richard Hollinworth, the earliest historian of Manchester. They were purchased in London, and sent down in casks. The invoices are still extant among the papers of the governors of the hospital and library. The list of librarians includes the names of the Rev. N. Banne, Robert Thyer, the editor of Samuel Butler's Remains; the Rev. John Radcliffe, compiler of the first printed catalogue of the library (2 vols., 1791); Rev.

John Hindley, an Oriental scholar, and Thomas Jones, the learned author of the catalogue of Chetham Popery Tracts. Dr. John Worthington, Master of Jesus College, a native of Manchester, speaks of the Chetham Library being, even in his time (1669), better than any college library in Cambridge. John Byrom, Dr. Deacon, and other scholars of their day, speak frequently of the use which they made of the library. Among other eighteenth century visitors were Daniel Defoe, Dr. Stukeley, and the impostor George Psalmanazar. The last named was of opinion that the library was too good for the people, and that some of the books might be disposed of, and replaced by others more within the capacity of mere tradesmen. The endowment of the library yields between £600 and £700 a year, and the number of volumes on the shelves is close upon 60,000. An eccentric bookseller, named Robert Holt, left his property at his death in 1881 to augment the collection of books, and from this source there is an income of about £50 a year. The very interesting library of John Byrom, formed in the eighteenth century, was given to the Chetham Library by his descendant Miss Atherton. The general library is rich in classics and the older theological authors, as well as in county and general history, and the department of manuscripts is unsurpassed by any public library in Lancashire. The number of manuscripts of local historical and genealogical interest is large, but the chief treasure is an early manuscript of Matthew Paris's Chronicle.

Manchester Public Free Libraries.

Immediately after the passing of the Public Libraries Act of 1850, the question of its adoption in Manchester was brought before the then Mayor, Mr. John Potter, who was knighted by the Queen on her visit to the town in the following year. He took up the matter with zeal, and forthwith promoted a subscription for the establishment of a library. The sum of £12,823 was thus raised, and then a building at Campfield was purchased and converted to the

purposes of a library, and stocked with books. The purchase of books and the organization of the library were placed in the hands of Mr. Edward Edwards, the chief author of public library legislation in England. The Town Council expressed their approval of the adoption of the Libraries Act in July, 1852, and a poll of the ratepayers was taken on August 20th, when 3,962 voted for and 40 against the adoption. Meanwhile the arrangements for the inauguration were proceeded with, the date fixed being September 2nd, 1852. Two meetings were held on that occasion, that in the evening being specially arranged for working men, a large number of whom had taken an active interest in the new institution, and had collected amongst themselves over £800 for the preliminary expenses. A remarkable number of distinguished men took part in the proceedings. Among them were W. M. Thackeray, Charles Dickens, Lord Lytton, Lord Houghton, Charles Knight, Peter Cunningham, Frank Stone, W. H. Wills, John Bright, the Earl of Shaftesbury, Sir William Brown, Sir James Stephen, and Bishop Prince Lee. The library began with 16,013 volumes in the reference, and 5,305 volumes in the lending department. Success attended the working of the library from the first, and in 1857 two branch libraries were opened in Hulme and Ancoats. Other branch libraries and reading-rooms were added as years went on, until now there are now no fewer than nineteen branches scattered throughout the city, containing 215,000 volumes. The reference library in King Street, contains 185,000 volumes, and it has become one of the most useful libraries, not only in the district, but in England, embracing, besides the standard books in every branch of literature, many interesting "special" collections, *e.g.*, dialects, botany, gipsies, shorthand, numismatics, architecture, local literature, trade, etc. A remarkable and very extensive special collection of books on bibliography, printing, and manuscripts, formed by Mr. Thomas Greenwood, has been presented by him to the Library. The Foreign Library, which was founded in 1830, and con-

tained nearly 16,000 volumes, has been transferred to the Libraries Committee and is temporarily accommodated at the Cheetham Branch Library. Attached to the branch libraries are spacious and attractive reading-rooms, furnished with the leading periodicals and newspapers; also evening reading-rooms for boys and girls. These rooms for juveniles have been working successfully since 1878, in which year the Sunday opening of the reference library and the reading-rooms throughout the city was begun. The original library at Campfield was closed in 1877, and the reference library was opened in the old Town Hall in the following year. There it remains for the present, but the authorities are looking forward to the provision of a building spacious enough not only for the existing collection, but for its future growth, as well as for the comfortable accommodation of the numerous readers. For further information, reference may be made to Mr. W. R. Credland's volume, entitled: "The Manchester Public Free Libraries: A History and Description, and Guide to their Contents and Use."

The Salford Free Public Libraries

owe their origin to Mr. E. R. Langworthy, Mayor, and Mr. Joseph Brotherton, M.P., who in 1849 induced the Town Council to adopt the Museums Act of 1844. The museum, with a reference library of 5,000 volumes, was opened at Peel Park on January 9th, 1850. The library may boast of being the first municipal free library, although the Public Libraries Acts were not formally adopted in the borough until 1893. The lending library at Peel Park was added in 1854. The first branch library was opened in Greengate in 1870, and additional branches have been added as follows:—Regent Road (1873), Pendleton (1877), Albert Park (1890), Charlestown reading-room (1894), Weaste (1894), Irlams o' th' Height (1901). The libraries have been open on Sundays since 1881. The number of volumes in the reference library is 35,000, and in the

lending libraries 53,000. (See Mr. B. H. Mullen's "Salford and the Inauguration of the Public Free Libraries Movement," etc., 1899.)

The John Rylands Library.

This magnificent building was opened on October 6th, 1899, after about nine years had been occupied in its erection. The architect was Mr. Basil Champneys. The whole cost of the building and its contents has been borne by Mrs. Rylands, by whom every detail was carefully considered before being carried out. She has also provided an adequate endowment for the administration of the library and the increase of its collections. Mrs. Rylands's original idea seems to have been to found a theological library, and she began as early as 1889 to make large purchases of books in that department of literature. Soon afterwards she enlarged her scheme, and bought some thousands of costly and important books in other departments of learning. The collection had thus already made considerable progress when, in 1892, Mrs. Rylands was informed that the Althorp Library was on sale, and she promptly secured it, much to the chagrin of at least one wealthy and envious American. This historic collection forms the central feature of the John Rylands Library, and elevates it to a prominent position among the greatest libraries of the world, although in numbers it does not yet much exceed 100,000 volumes. It is impossible in a short space to describe the treasures of the library, the number of specimens of books printed before 1500 exceeding two thousand, most of them in the finest possible condition. There are more than fifty Caxtons, the first four folio Shakespeares and original editions of many famous books, while the collection of Bibles is one of the finest in the world. Such rarities, however, form but a comparatively small portion of the entire library, which embraces an abundant supply of "working tools" and other books needed by students of theology, philosophy, topography, travel, archæology, and literature. In most of these sections the library is growing

rapidly, and is being kept up-to-date. Science, except as regards some great books on natural history, is unrepresented, and so is technology, also, as a rule, statistics and economics. Few institutions are able to show so many fine specimens of the work of famous English and foreign binders. In 1902 Mrs. Rylands purchased Lord Crawford's wonderful collection of manuscripts, which has now been incorporated in the John Rylands Library.

The University Library

was begun in 1851 by a donation of 1,200 volumes from Mr. James Heywood, F.R.S., and now numbers about 97,000, exclusive of the library of the late Dr. Richard Copley Christie, which was added by bequest in 1901. The building in which the University Library is preserved was given by Dr. Christie, and was opened in 1898. The beautiful room which is called the reading-room and reference library, is adorned by a number of interesting portraits and busts. The library, in addition to Dr. Christie's exceedingly valuable collection, comprises the library of Dr. J. Prince Lee, first Bishop of Manchester (7,000 vols., history, art, etc.); that of Professor E. A. Freeman (6,000 vols., historical); the Hager Memorial Library (Greek law and Teutonic philology); the Samuel Robinson collection (Oriental, etc.); the Theodores collection (Oriental, etc.); Canon Hieks's collection of books on Greek inscriptions; the Manchester Goethe Society's library of books relating to Goethe; also scientific books from the library of David Forbes, F.R.S.; the Angus Smith Memorial Library (chemistry, physics, etc.); the Milnes Marshall Memorial Library (zoology, etc.), and a large collection of geological books given by Professor Boyd Dawkins. The manuscripts and early-printed books form a small but interesting collection, and among the book rarities is a copy of the first folio Shakespeare, presented by Mr. Edward Donner. Non-members of the college are admitted to use the library on obtaining an order from the Vice-Chancellor. The librarian is Mr. Charles Leigh.

The Literary and Philosophical Society,

36 George Street, was founded in 1781, and the formation of its library began soon afterwards. The chief distinction of the library is its large collection of Transactions of scientific societies.

The Portico Library,

Mosley Street, is a proprietary and subscription library, founded in 1804, and has about 40,000 volumes, including many county histories and an extensive collection of 18th century pamphlets.

Medical Society's Library.

The Manchester Medical Society was founded in 1834, with the objects of establishing a medical library and reading-room, and of holding "occasional meetings for mutual improvement and the advancement of medical science." The first president was Dr. Hull, and the first home of the society was at No. 40 Faulkner Street. In 1845 rooms were taken at the Royal Institution, Mosley Street, and there the society remained for thirty years, when it removed to the Owens College. The number of volumes in the library is about 32,000, and there is a printed catalogue. Dr. C. J. Cullingworth, a former honorary secretary, wrote an interesting account of the library in the "Liverpool and Manchester Medical and Surgical Reports" for 1876.

St. Mary's Hospital Library.

This is a valuable gynæcological library, founded and endowed by the late Dr. Thomas Radford, and bearing his name. There are about 4,800 volumes.

Royal Infirmary Library.

This was begun in 1791 for the use of the medical staff, and contains about 5,000 volumes.

The Athenæum,

Princess Street. The library of this popular institution contains about 21,000 volumes in general literature. It was founded in 1838, and suffered serious loss in a destructive fire in 1873.

Among other local libraries, the following are worth notice:—1. Municipal School of Technology; scientific and technical works, including the late Dr. J. P. Joule's scientific library. 2. Municipal School of Art; works on the principles of art and art applied to industrial design. 3. Manchester Museum, University, 5,000 volumes in all branches of natural history. 4. Whitworth Institute, works on the fine arts. 5. Lancashire Independent College, 14,000 vols., chiefly theological, with a few early-printed books. 6. Didsbury College (Wesleyan), 10,000 vols. 7. Baptist College, Rusholme. 8. St. Bede's (Catholic) College, Alexandra Park, 7,000 vols. 9. Unitarian Home Missionary College, Victoria Park. 10. Friends' Meeting House, a fine collection of early Quaker books. 11. Manchester Geological Society. 12. Manchester Geographical Society. 13. Law Library, Kennedy Street, founded in 1820, 13,000 vols. 14. Schiller Anstalt (German Club). 15. Reform Club. 16. Literary Club. There are also small libraries at the Union, Conservative, and other clubs.

CHAPTER IX.

MANCHESTER AS A CENTRE OF EDUCATION.

The very complete system of education possessed by Manchester and the surrounding district may be well appreciated by a careful reading of the following sections, which clearly trace out the steps of the "educational ladder." It will be noticed that the chapter has been divided into four sections, viz., Elementary or Primary, Secondary (Grammar Schools and Girls' High Schools), Technical, and the University.

SECTION I.

ELEMENTARY EDUCATION IN MANCHESTER AND SALFORD.

By CHARLES HENRY WYATT, M.A., *Director of Elementary Education to the Manchester Education Committee; and*

OGILVIE DUTHIE, B.A., *Director of Education, Salford.*

Manchester and Salford were amongst the large towns which adopted the Elementary Education Act, 1870, immediately on its coming into operation. The first School Board for Manchester was elected on the 24th November, and that for Salford on the 30th November, 1870. The policy of the two Boards was framed largely on similar lines, and the two Boards worked in harmony one with the other. This condition of things was no doubt due to some extent to the fact that for the first twenty years of their existence, with the exception of one term in Manchester between 1885 and 1888, the late Mr. Herbert Birley was Chairman of both Boards.

Immediately upon its formation in 1870, the Manchester School Board entered upon a careful investigation of the

educational condition of the city. It was found that while there were 58,557 children for whom public elementary school accommodation was needed, the existing accommodation provided only 45,209 places. The population of the city was then 351,361. The School Board set itself to remedy this deficiency of accommodation, and the accommodation of the public elementary schools of the city which, as a result of the Education Act of 1902 have passed under the control of the Education Committee, is now 127,826, of which 70,672 places are provided in 83 Municipal schools, and 59,154 in Non-Provided Schools. The following figures will show the advance in school attendance in Manchester since 1871.

Year.	Population.	Accommodation.	Average Attendance.	Number on Books.	Percentage of Number on Books to Population.	Percentage of Average to Number on Books.
1871	351,361	45,209	26,522	37,279	11·2	67
1907	631,000	128,492	100,026	110,849	17·5	90·2

The amount of elementary school accommodation existing in Salford was found, after careful inquiry and examination, to be more than sufficient for the estimated number of children requiring elementary education, and there was therefore no necessity for the Board to take any steps for some time towards the provision of Board schools. With the growth of the population, however, the necessity for additional school accommodation arose, and at the present time the number of school places in the former Board schools, now Council schools, is 19,814, most of which have been provided by the erection of new buildings, the remainder being in schools transferred by their previous managers to the School Board. The number on the rolls is 17,154. The accommodation in the Voluntary schools is 27,983, and the number on the rolls 22,580. The following are the Salford figures corresponding to those given in the case of Manchester.

Year.	Population.	Accommodation.	Average Attendance.	Number on Books.	Percentage of Number on Books to Population.	Percentage of Average to Number on Books.
1871	124,805	21,000	10,439	16,631	13·3	63
1907	236,670	48,077	35,605	39,734	16·8	89·6

The Original Owens College, Quay Street.

Entrance to Manchester School of Technology.

School Buildings.

Considerable improvement has been made in the character of the school buildings. The type of old school, in which three or four classes worked together, and which contained only one or two small classrooms, has been replaced in most of the newer buildings by a type of school which provides for each class a separate classroom, entered from a central hall. The central hall is of great advantage for the purposes of assembly, physical exercises, and as an aid to ventilation, whilst the separate classroom enables the teacher to work with the least strain upon the voice.

Curriculum.

The curriculum of the schools was revised by the Committee in 1906. Whilst this necessarily follows the lines laid down in the Code issued annually by the Board of Education, a considerable amount of freedom is permitted in drawing up the courses of instruction. The opportunity has been taken to make the instruction of a more practical kind by the introduction of such subjects as cookery for girls and manual instruction for boys. The latter subject is now recognized as a most valuable factor in the education of boys. Woodwork is the branch usually chosen, and the instruction includes theoretical knowledge of the tools and materials, drawings to scale and in perspective, and practical work. The models are made by the boys from their own working scale drawings. In Manchester there are 30 centres equipped for this kind of work, attended by over 10,000 boys drawn from 105 different schools.

Religious instruction is given in all the Municipal schools in accordance with a carefully prepared syllabus.

Physical Training.

More attention has recently been paid to the question of the physical training of the scholars. The Baths Com-

mittees of both Corporations afford special facilities for the attendance of the children at the public baths, and arrangements are made for the older boys and some of the girls in almost all the schools to attend during school hours in the summer months in charge of their teachers. A considerable development of swimming amongst the scholars has thus been secured. The provision of suitable physical exercises at the schools is also receiving careful attention.

Country School for Town Children.

Touching upon the physical condition of children, an interesting provision has for three years past done capital work for town children. A Voluntary Committee arranged for the erection of a corrugated iron and brick building in a country district in Cheshire (distance from Manchester about ten miles). The building was originally for 80 children (it is now being enlarged so to accommodate 120), with rooms for Matron, servants, and teachers. The building embraces two dormitories, dining-room, schoolroom, and domestic offices. The site is sufficiently large to afford a playfield four acres in extent, and there are flower and vegetable gardens.

In this school from April to October relays of children are sent in classes of forty with their own teachers for a fortnight at a time. The parents pay 7s. (for the fortnight's stay) for each child. This covers railway fares to and from the school. During half of each school day the children receive instruction in the schoolroom or in the open air, working according to a special time-table happily varied to suit country surroundings. In the afternoons the children are taught in the gardens, where the flowers and bees contribute admirable objects for explanation by a skilled gardener—other time is taken up with organised games and walks in the surrounding country. The domestic arrangements are under the control of a resident Matron, who is assisted by servants, but the children give consider-

able assistance. The food is plentiful and varied, no stint is exercised, and the milk used is all fresh and whole. In the height of summer we supplement the dormitories by tents in the fields, where the boys are fixed up to their immense delight. The arrangement is that the Country School is used by batches of boys and girls alternately. It is only during the summer months when we have our Day Industrial School children out that boys and girls are together at the school. At this time the girls and little boys are in the dormitories and the bigger lads are in the tents. One period of a fortnight is reserved for children attending Day Classes for Mentally Defectives. No class shows more marked improvement than do these children, many of whom are constitutionally delicate. No child is allowed to go without payment, except in the case of the Day Industrial School when the Education Committee pay, and now that there can be accommodated 120 in the school and an additional 80 in tents it is believed that the children's payments will cover the cost of maintenance. The children quickly manifest improvement in health, manners, and demeanour, the latter the result of living together under proper conditions; and the last effect of the complete change is shown by the letters sent to the schools by the children when they return home. The whole scheme works smoothly. Much of the success has resulted from the fact that each class or group of forty children is accompanied by their Day School teacher, who remains in charge of the class during the fortnight.

Higher Elementary Schools.

In order that opportunities may be provided for clever children who pass the standards at an early age, and whose parents are anxious that they should remain at school beyond the ordinary exemption age, both Councils have established higher elementary schools, at which the curriculum is of a somewhat wider and more advanced kind than in the ordinary schools.

These schools have carried on very successful work, and have succeeded to a considerable extent in bridging over the gap which exists between primary and secondary or technical schools. Manchester has five such schools and Salford two.

Teaching Staff.

There are 110,849 children on the books of the Manchester Public Elementary Schools, and a staff of 3,392 teachers is engaged in their instruction. These comprise 369 head teachers, 2,483 assistant teachers, 467 pupil teachers and 73 special teachers. The annual expenditure on day school teachers' salaries, day and evening, is about £259,650.

The staff in Salford consists of 134 head teachers, 860 assistant teachers, 175 pupil teachers and 18 special teachers, making a total of 1,187. The amount expended annually on day school teachers' salaries is approximately £88,274. 9s. 7d..

Pupil Teachers.

Very careful attention is given by both Boards, so as to secure an adequate and efficient supply of pupil teachers. These teachers formerly received their instruction from their respective head teachers before school hours in the morning, and were engaged in teaching during the whole of the day; but this system has for some years been discontinued, and the training of the pupil teachers is now provided in central classes under special teachers. The pupil teachers are engaged for about half-time in school work and for half-time at the central classes. The establishment of these classes has very considerably reduced the strain upon the pupil teachers, who have at the same time been enabled more readily and successfully to prepare for and pass their examinations.

Medical Officer.

In September, 1898, the Salford School Board appointed a Medical Officer whose duty it should be *inter alia* to

visit the schools periodically, and to report as to their sanitary condition; to examine plans for school buildings, and to report as to their sanitary arrangements, ventilation, lighting, etc.; to examine children reported to the Board to be blind or deaf, or defective, or feeble minded, and to give the Board the benefit of his views upon special occasions. The Medical Officer of Health, Dr. C. H. Tattersall, now acts as Medical Officer to the Education Committee, and an Assistant Medical Officer, Dr. J. J. Butterworth, has been appointed, who devotes the greater portion of his time to the educational side of the work.

The Manchester Education Committee have two Medical Officers, Dr. Brown-Ritchie, and Dr. H. L. P. Hulbert, who devote the whole of their time to the services of the Committee.

The services of the Medical Officers in regard to the ventilation and sanitary condition of the school buildings, the prevention of the spreading of infectious diseases, the sight and hearing of the children, and in many other matters, are of the utmost value and assistance to the Education Committees.

In this connection it may be mentioned that both Committees have an arrangement with the Medical Officer of Health for the respective districts, under which all cases of infectious sickness are reported by the attendance officers or teachers to the medical officers, who, in turn, notify the schools when disinfection of the premises (if such has been necessary) has taken place, and it is safe to re-admit the children to school.

Compulsion, etc.

For the purpose of securing the attendance of children, and of enforcing the compulsory clauses of the Elementary Education Acts, staffs of attendance officers are employed whose services are available for all the Public Elementary Schools of the city and borough.

Industrial Schools.

In dealing with children under the Industrial Schools Acts both Committees have adopted a similar policy. The district being well supplied with residential industrial schools, the Committees have considered it preferable to send their children to the local schools already established, rather than to provide schools of their own. Some children are sent, for obvious reasons, to certified schools some distance from Manchester. Building grants for alterations and improvements have been made from time to time to the several schools. At present the number of children maintained by the Manchester Education Committee in ordinary industrial schools is 452, and by the Salford Education Committee 138.

A day industrial school has, however, been established by each Committee to which children whom the ordinary measures of compulsion fail to bring into regular attendance at school are committed. The children are fed and educated, but return home in the evening.

Blind and Deaf and Defective and Epileptic Children.

Recent legislation has placed upon Local Education Authorities the obligation of dealing with blind and deaf children and with defective and epileptic children. In regard to the blind and deaf, the Committee have deemed it desirable to follow the same policy as has been adopted in the case of ordinary industrial schools, and the children, on being certified as suitable cases by the medical officer, are sent to residential schools until they attain the age of sixteen years. Owing to the difficulty of obtaining in residential schools places for certain blind children, the Committee have opened day classes for blind children.

Special day classes have been established in Manchester for dealing with defective children. In Manchester there are three special schools for mentally defective children and a residential school for crippled children. The Committee have also established a school for epileptic children at the David Lewis colony.

School Savings Bank.

With a view to the encouragement of thrift amongst the scholars, Penny Savings Banks were established in the schools as early as 1882. A steady growth has taken place in the number and in the amount of the deposits, the figures for the last completed year being as follows:—

MANCHESTER SCHOOLS.

	£	s.	d.
Number of Transactions	1,277,751	0	0
Amount of Deposits	42,885	15	11
Accounts remaining open	51,544	0	0

SALFORD SCHOOLS.

	£	s.	d.
Number of Transactions	222,366	0	0
Amount of Deposits	6,549	3	11
Accounts remaining open	8,819	0	0

Cost.

The amount received by the Education Committee from the local rates for Elementary Education during the last year was £215,695. 13s. 1d. in Manchester and £52,261 in Salford.

SECTION II.

ENDOWED SECONDARY SCHOOLS IN THE MANCHESTER DISTRICT.

The Manchester Grammar School.*

The school was founded in 1515 by Hugh Oldham, Bishop of Exeter. The object of the founder, as expressed by his chaplain, Hugh Bexwycke, in the preamble to the statutes of the school, was "the brynging upp of childeryn in their adolescency and to occupie them in good lerning, from and oute of idilnes . . . . whereby they may the better know, love, honor and drede God and his lawes," because this is "the key and grounde to have good people."

The original trustees were the Warden and Fellows of the College of Manchester (now the Cathedral Chapter), but in 1524 a new set of twelve lay feoffees were appointed, and the selection of the High Master was given to the President of Corpus Christi College, Oxford, with the special injunction that he might be a priest or no priest, "so that he be no religiouse man." All but the last three have been so appointed, but since 1877, when the scheme under which the school is now governed came into effect, the appointment has rested with a Board of Governors, of whom the President of Corpus Christi College is an *ex-officio* member. The successes gained by the school at Oxford and Cambridge since 1878 may thus be tabulated:

* This article is founded on one written by Mr. J. E. King, M.A., late High Master of the School, now revised by his successor, Mr. J. L. Paton, M.A.

Open Scholarships and Exhibitions	412
Fellowships	23
University Prizes and Distinctions	95

The school registers, which do not, however, extend back beyond 1730, show that the Grammar School has educated many lawyers, professors, fellows and heads of colleges, bishops and doctors, amongst whom have been Lord Chief Justice Alvanley; Sir Frank Lockwood, Solicitor-General; Cyril Jackson, Dean of Christ Church, Oxford; Dr. Frodsham Hodson, Regius Professor of Divinity and Principal of Brazenose College, Oxford; Dr. John Latham, President of the College of Physicians, etc., etc. In literature it can boast of De Quincey and Harrison Ainsworth. Such names are easier to trace than the great army of those who have passed from the school into the ranks of industrial and commercial life.

The school still stands on the site selected by the founder, just outside the entrance to the College (now Chetham's Hospital) of the Collegiate Church of S. Mary. It fronts the old and winding thoroughfare called Long Millgate. The original stone house erected here for his new school by Hugh Oldham, at a cost of £218. 13s. 5d., lasted for over 250 years. The plain brick building which then took its place lasted till 1880. Its appearance and internal life at the beginning of the last century is well described by Ainsworth in "Mervyn Clitheroe." A relic of it is still preserved—a medallion bearing an owl in relief, which stood on the front of the house in the angle of the gable and may now be seen let into the wall inside the present main entrance. This bird of wisdom has become the characteristic badge of the school, the figure having a punning reference to the founder's name. The High Master's house from which De Quincey ran away, was a half-timbered building pulled down in 1835 to make way

for a more commodious residence, which is now the Cathedral Hotel. The extensive premises which the school now occupies consist of two separate buildings joined by a covered bridge on the first floor—the "old building," erected in 1870 and designed by the firm of Barker and Ellis, and the "new building," erected in 1880 and designed by Messrs. Mills and Murgatroyd. The total cost amounted to £80,775.

The old building comprises, besides ordinary classrooms, a drawing hall large enough to hold the whole school at once. This contains also an organ of two manuals and is used for morning prayers. Opposite the hall is a lofty physics laboratory connected by a spiral staircase with a lecture-room above. Behind the principal laboratory is a smaller one, and also a room containing a gas engine, dynamos and an electro magnet used for physical experiments, etc. In the basement is a dining-room where dinner is provided at 12-30, though all who prefer it are allowed to get a meal outside in the town. The new building (the further of the two from the Cathedral), built partly on an arch thrown over the Irk, is in form a hollow square with two internal galleries giving access to the various rooms. Amongst these are the High Master's room, the Beyer chemical laboratory and lecture theatre, the large lecture theatre, and, at the extreme top, the school library. On the walls of the lower corridor there is a brass tablet put up in memory of the late Sir Frank Lockwood with an inscription composed by Lord Rosebery; facing it is a memorial to "old boys" who fell in the South African War; there is also a tablet in memory of the late Dean Maclure. Nearly the whole of the ground floor is occupied by the Langworthy Gymnasium. This is covered by a slightly-domed roof of glass, and is one of the largest and finest in the country. All boys receive

instruction in gymnastics and physical drill, and accurate measurements are kept recording the physical development of each individually. In the basement of the building is the Procter Workshop, where manual training in woodwork is given as part of the regular school routine.

The school hours are from 9-5 to 12-20 and from 1-10 to 3-10 daily, except Saturday, which is a whole holiday. Lack of a suitable space for play close at hand makes a short mid-day interval advisable, and the early hour at which work ends enables those boys who come from a distance to reach home in reasonable time. As the school draws pupils from a very considerable area, which extends over a radius of thirty miles, early closing is a necessity. Boys wearing the school cap—dark blue with two light blue rings and a bright metal owl over the peak—are conspicuous on every line of approach morning and afternoon, on foot or on cycle in the streets or in trams and trains. As founded the school was a free school, and free it remained till 1867, when a scheme for the admission of paying scholars was sanctioned by the Court of Chancery. The extraordinarily rapid increase in numbers which followed amply justified this step. The number of boys now in the School is close upon 900, and in the Preparatory Schools at West Didsbury and Higher Broughton there are upwards of 200 junior boys. Of these 150 are free scholars holding foundation scholarships, half of which are reserved for candidates from public elementary schools.

From the highest form to the lowest the school is divided into two " sides," classical and modern, further specialization being practicable in the upper forms. Thus there are four VIth Forms—classical, science, mathematical and modern—whilst there is also a Science Vth. The classes below the Sixth on both classical and modern side take the Joint Board Matriculation Examination of the four

Northern Universities; the Sixth Form boys do higher work of Scholarship standard. Commercial subjects are not neglected, and boys can learn shorthand and book-keeping, while optional classes in a variety of subjects may be attended. There is a staff of forty teachers.

Various societies (literary, philosophical, debating, photographic, natural history, chess, glee and orchestral), in which masters generally take part, meet after school hours and do much to widen the scope of a boy's knowledge and interest.

The school is richly endowed with scholarships and prizes tenable at the school or at the Universities, a sum of £1,580 being attainable yearly by boys in the school. The income for working expenses, however, is inadequate, being derived almost entirely from the fees, as the endowment is nearly all absorbed by the provision of the free scholarships on the foundation. A grant of £600 per annum is made by the Education Committee of the Manchester Corporation, and the Salford Corporation also makes a grant of£300 per annum.

The playing field for cricket, football and lacrosse is situated at the foot of the Cliff, Lower Broughton, and is reached by tram from Deansgate in about fifteen minutes. This field is a great boon to the boys, but the situation is naturally more convenient for some than it is for others.

Preparatory schools to the Grammar School, under the direction of committees of the Board of Governors and others exist in South Manchester, close to Withington Station on the Midland Railway, and also in North Manchester, at Leicester Road, Higher Broughton. The Head Masters are A. W. Fuller, Esq., M.A., and A. W. Dennis, Esq., M.A., respectively.

The Grammar School drawing hall is utilized on Saturday mornings for art classes, under the superintendence

of the school art master, Mr. J. Jackson, and his assistants, for ladies and teachers.

The boys of the school make a collection annually, which helps to support a lad's club, called "The Hugh Oldham Lads' Club," the premises of which are in Livesey Street, one of the poorest quarters of the town on the east side.

THE HULME GRAMMAR SCHOOL.

Head Master:—Joseph Hall, M.A., D.Litt.

The Hulme Grammar School is situated on the south side of Manchester, close to Alexandra Park.

The school, which was opened in January, 1887, is now attended by upwards of 230 boys. It is endowed out of the estate devised by William Hulme, of Kersley, in 1691, and it is governed under a Scheme of the Charity Commission. It has received from the Manchester Education Committee a grant of £250 for 1906.

The limits of school age are seven and seventeen. The school aims mainly at giving a practical training for business life, and stress is therefore laid on English, modern languages, mathematics and physical science. The latter subject forms a part of the work of all forms, except the highest on the classical and modern sides, and the instruction in it is largely imparted by practical work in the laboratories. There is a workshop in charge of a skilled instructor. The modern languages taught are French, German and Spanish; the "new method" has for some time been employed. Much attention is given to the teaching of geography, and the school possesses a good collection of maps and other apparatus. There is a playing field of eleven acres, and the games hold an important

place in the life of the school. There are ten assistant masters, nine of whom are graduates, about thirty-four scholarships and nine leaving exhibitions.

HIGH SCHOOLS FOR GIRLS.

MANCHESTER HIGH SCHOOL FOR GIRLS.
Head Mistress:—Miss BURSTALL, M.A.
(Late Scholar of Girton College),
Dover Street, Oxford Road, Manchester.

PENDLETON HIGH SCHOOL FOR GIRLS.
Head Mistress:—Miss PATTERSON, M.A.,
Birch Mount, Eccles Old Road, Pendleton.

IT is now over thirty years ago that the movement for founding girls' high schools began to take definite shape, and the Girls' Public Day Schools Company, founded in 1872, proposed to open a school in Manchester. There was, however, a Manchester Association already in existence for promoting the education of women, and this body determined to found such a school for the city. A guarantee fund of nearly £3,000 was raised, and Miss Day chosen as head mistress of the new school, which was opened on the 19th of January, 1874, in two houses in Oxford Road, under the title of the Manchester High School for Girls. Among the leaders of this movement were the then Bishop (Dr. Fraser), Dean Cowie, Mr. and Mrs. R. D. Darbishire, Professor Wilkins, Miss Gaskell, and Mr. Donner, the two last-named being still members of the governing body. The school grew rapidly in numbers and a permanent building became a necessity. Land was secured in Dover Street, and a special building fund opened, which met with a liberal response. Finally,

an endowment from the Hulme Trust was secured, and a scheme obtained, which was approved by the Queen in Council on the 2nd of February, 1884. This meant that the school had a definite status, as a first grade public endowed school. £15,000 was paid over to the building fund from the Hulme Trust and £1,000 a year is paid annually, £750 of which is devoted to scholarships and exhibitions. The governing body is largely representative, including members from the universities of Oxford, Cambridge, London and Manchester, and from the Councils and Education Committees of Manchester and Salford. The building has now been more than twenty years in use, and has proved to be thoroughly fitted for its purpose. It is of a type commoner in America than England, and is well worth visiting. A very fine biological laboratory, and a well-equipped cookery school have been recently added, and electric light has been installed throughout.

No one school could obviously meet the needs of pupils in all parts of the city without serious inconvenience, and therefore in 1885 the governors opened what at first was a preparatory, but afterwards became an independent sister school at Pendleton.

The type of education given is what is called first grade, and it has always been part of the tradition of the Manchester High School to prepare for college. Open scholarships at Newnham, Girton, the Oxford Colleges, and especially, of course, at the University of Manchester have been won (in 1906 the Mary Conybeare at Somerville College, Oxford. and five, including the Jones, for history, at Manchester). Of late years teaching has been given in the domestic arts, and in secretarial work, and the science department has been developed and enlarged. The Pendleton School shares in the benefits of the endowment, and sends girls to college.

Both the schools have facilities for games, and gymnastic teaching, on the Swedish system at the Pendleton School and on a modified German system at the Manchester School, forms a regular part of the curriculum.

The Manchester School receives a grant of £300 a year from the Corporation, and scholarships and bursaries given from the city funds are held there, as Salford scholarships and bursaries at the Pendleton High School.

Photo by F. Ireland, *Manchester.*

In the City Art Gallery.

The Physics Laboratories.

SECTION III.

TECHNICAL AND ART INSTRUCTION IN THE CITY OF MANCHESTER.

By J. H. REYNOLDS, M.Sc., *Director of Higher Education of the City of Manchester and Principal of the Municipal School of Technology.*

There are few cities of the United Kingdom wherein is to be found such ample provision for Artistic and Technological training for Industrial and Commercial pursuits under direct Municipal control as is to be found in the City of Manchester, nor is there any city where the desire to take advantage of the facilities afforded is so keen and so fruitful.

The fine building in Sackville Street, known as the Municipal School of Technology, and the hardly less ample provision for training in Art and Design to be found in the Municipal School of Art in Cavendish Street, are a striking instance of the liberality and enterprise of the Corporation. The former building, in which such complete provision for the various branches of Engineering, Industrial Chemistry, Textiles, and for other minor industries is made, together with its adjunct known as the Dyehouse in Whitworth Street for practical instruction in the Bleaching, Dyeing, and Finishing of Textile Goods and in Papermaking, is due to the liberality of the Corporation, and to the generosity of the Whitworth Legatees in the provision of the site for the main building.

The Municipal School of Art was transferred to the Corporation in 1890, since which date, partly due to funds derived from the proceeds of the Royal Jubilee Exhibition, there has been added the unique Arts and Crafts Museum designed to afford facilities for the study of fine examples, original and in reproduction, of artistic design and workmanship.

Both institutions, under the direction of the Corporation through its Education Committee, successfully illustrate the development of the means and methods of Technical Instruction and training in a great manufacturing and commercial centre.

The School of Technology is a building of imposing proportions constructed in terra cotta and Accrington brick, situate in Sackville Street, and occupying, exclusive of the Dyehouse, a site upwards of 7,300 square yards in extent. It is in the French Renaissance style of Architecture, and is one of the largest and handsomest buildings in the City, and is acknowledged to be the best equipped School of Technology in the Kingdom. It is oblong in plan, and comprises six stories, the corridors on each floor being lighted from two spacious areas, whilst the class-rooms and laboratories are lit from the outside.

The chief and practically the only entrance is in Sackville Street, leading to a spacious entrance hall filled with examples of antique sculpture, and thence to the main staircase, there being two subsidiary staircases, each containing a lift giving ready access to the rooms on each floor. Over the entrance hall is a spacious examination and public lecture hall, and above it a commodious chemical laboratory.

The School is designed to accommodate the Mechanical, Electrical, and Sanitary Engineering, the Chemical, the Textile, the Building, the Letterpress Printing, Lithographic, Photo-process, and some other minor trade industries, whilst in the adjoining building known as the Dyehouse, ample provision is made for the Bleaching, Dyeing, Printing and Finishing of Textile goods, and for Paper-making.

The building and its equipment is a serious attempt to place at the service of the industry and commerce of this city and district an institution which shall be adequate to their needs and importance, and comparable in all respects with the great institutions of like aims to be found on the Continent and in the United States of America.

The value of the sites, structure, and equipment of the two buildings is at least £300,000, and Manchester is thus, having regard to the resources of the University for scientific and technical training, and to the Municipal School of Art, with its fine Arts and Crafts Museum, for education in Art, second to no City in the Kingdom in the facilities which are available for giving the best possible instruction in Science and Art in their application to the great industries and world-wide commerce of which the City is the centre and life.

The total number of individual students in attendance in the day and evening courses of the Municipal Schools of Technology and Art for the session 1905–6 was 6,815, of whom 5,418 were 18 years of age and over.

The School of Technology was opened in October 1902, in the presence of a distinguished audience by the Prime Minister, the Rt. Hon. Arthur James Balfour, M.P. In the course of his address he referred to the School in the following terms—"This building is perhaps the greatest fruit of its kind, the greatest fruit of this kind of municipal enterprise in this country. . . . Nobody can go over this building, observe its equipment, study even in the most cursory manner the care which has been devoted to it, without feeling that the Corporation of this great City have set a great example worthy of the place they hold in Lancashire, worthy of the place they hold in Great Britain."

It is worthy of note that Manchester was the second City in the Kingdom to adopt the Technical Instruction Act of 1889, and to levy a rate for the purposes of Technical Instruction, and the City Council has consistently placed at the disposal of the Education Committee the City's share of the funds arising under the provisions of the Local Taxation (Customs and Excise) Act of 1890, which placed at the disposal of Local Authorities for purposes of Technical Education an annual grant of nearly £800,000.

The provision of Secondary Education within the City, without which there can be no really successful technical

training, has received the careful attention of the Education Committee, as shown in the development of the Municipal Secondary School in Whitworth Street, attended by upwards of 800 boys and girls from 12 years of age and upwards.

A complete and liberal scheme of Scholarships correlating all forms of Education in the City from the Elementary School up to the University has been established at an annual cost of upwards of £14,500.

The Evening School system of the City has also received the careful consideration of the Education Committee. There will be found a careful grouping and suitable distribution of these Schools into Evening Continuation Schools—Evening Institutes for Women—Branch Commercial Schools and Branch Technical Schools, all with the object of connecting them with the Commercial Evening School in Whitworth Street, and with the Municipal Schools of Technology and Art. The number of students in attendance at these various Institutions is upwards of 24,000.

The Committee have also established in Princess Street a Pupil Teachers' Training College, and also conduct in South Parade, Deansgate, a special School of Domestic Economy for the training of teachers in the subjects of Cookery and Domestic Science.

TECHNICAL EDUCATION IN THE BOROUGH OF SALFORD.

By OGILVIE DUTHIE, B.A., *Director of Education.*

The Royal Technical Institute was established to provide systematic instruction in those branches of knowledge which have a direct bearing upon the leading industries of the district; and as antecedent thereto, a thorough secondary education. The conception of such an Institution for Salford took place immediately after the passing of the

Technical Instruction Act in 1889. The foundation stone was laid in 1892, and the Institute commenced teaching operations in September, 1896. The total cost of the building was about £61,000, and the approximate cost of furnishing and equipment has amounted to over £20,000. The Institute stands in the grounds of Peel Park, perhaps the best known public park in Lancashire, and it has a very imposing appearance. The building is of red ruabon brick, roofed with red tiles. The facings and moulded ornaments are of red terra cotta. It is about 311 feet in length, and its height to the central gable is a little over 100 feet. There are four stories. The style of architecture is Renaissance. The frontage is relieved by pleasing ornamentations, and on the walls are a few panels on which are figures and emblems representing Art, Science and Industry. The great hall, a spacious room on the ground floor, provides seating accommodation for 700 persons. It contains a fine organ presented to the Borough by Sir Lees Knowles, Bart., one of the former members of Parliament for Salford, and was given by him to commemorate the visit of the present Prince and Princess of Wales (then the Duke and Duchess of York) who opened the Institute on the 25th March, 1896.

The Architect of the building was Mr. Henry Lord, F.R.I.B.A., of Manchester.

The operations of the Institute are divided as follows, viz.:

(*a*) Secondary Day School for Boys.
(*b*) Day Technological Classes.
(*c*) Evening Classes.
(*d*) Special Classes.
(*e*) School of Art.

There are few districts in the country with a greater variety of industries than are to be found in the Borough of Salford, within whose boundaries are extensive

mechanical and electrical engineering works, cotton mills, dyeing and calico printing works, and a large number of smaller, but still important industries.

Organized courses are provided in the Day Technological Classes in the following departments:—

Mechanical Engineering.
Electrical Engineering and Physics.
Chemistry.
Dyeing, Calico Printing, and Bleaching.
Building Trades.
Textile Trades,

and in addition there are departments for the domestic subjects, and a School of Art.

Evening Classes are held in the various subjects embraced in all the above-mentioned departments, and there are also Special Classes in Modern Languages, and for preparing students for certificates as Sanitary Inspectors, etc., etc.

Admission to the Evening Classes at the Technical Institute is subject to an entrance examination for students under 16 years of age. Those who do not possess a knowledge necessary to pass this examination are recommended to join one of the Evening Schools in the Borough, at which the necessary preparation may be obtained. The classes conducted by the Education Committee have been organized by the Director of Education, so as to provide a co-ordinated scheme of instruction, and the scheme embraces the Continuation Schools, Commercial schools, and the Royal Technical Institute Classes.

SECTION IV.

THE MANCHESTER UNIVERSITY.

By EDWARD FIDDES, M.A.,
Registrar of the University.

1.—History of the College and University.

The Owens College was founded under the will of a Manchester merchant, John Owens, who died in 1846, leaving a sum of about £96,000 for the foundation of a College which should be absolutely free from religious tests of every kind. It began its existence on March 12th, 1851, in a modest building in Quay Street (now the County Court, formerly the residence of Richard Cobden), with a staff of five Professors and two teachers. Its first Principal was a distinguished scholar and literary man, Dr. A. J. Scott, and the staff included Dr. Edward Frankland (afterwards knighted), one of the greatest English chemists, and William Crawford Williamson, one of the most remarkable English biologists, of the century. The institution passed through a crisis in the years 1856–7, and was for a time regarded as a failure. In the year 1857, Dr. J. G. Greenwood was appointed Principal, and Dr. (now Sir) Henry Roscoe was appointed Professor of Chemistry. From this time forward the College grew. It was re-organized and transferred from the Owens trustees to a Court of Governors by two Acts of Parliament in 1870 and 1871. In 1873 it was removed to its present site in Oxford Street.

Meanwhile the idea was mooted—in the first instance in 1875—of raising the College to the rank of University with power to grant degrees. It was originated by four members of the Senate of the College, viz., Dr. Greenwood and Professors Morgan, Roscoe and Ward. Two years later memorials were sent up to the Privy Council praying

for the grant of a charter, and for the conversion of the Owens College into the University of Manchester. In 1878 opposition to the scheme thus propounded was started by the Yorkshire College, College, Leeds, and by other bodies outside Manchester, with a view to preventing the University charter from being conferred upon the Owens College alone. This opposition was successful, and it was finally decided by agreement between Manchester and Leeds, that while the seat of the new University should be in Manchester, yet it should be named, not the University of Manchester, but the Victoria University after Her Majesty the Queen, and that while Owens College should be the first College of the University, yet that provision should be made for the admission from time to time of other Colleges which could furnish satisfactory proof of adequate equipment. It was further agreed that attendance at prescribed courses of lectures in one or other of the Colleges of the University should be a necessary pre-requisite for obtaining a University degree. An important distinction was thus made between Victoria and London University, which was at that time merely an examining body which required no proof of academic training from the candidates for its degrees.

The charter thus agreed upon was ratified on the 20th April, 1880, and was followed by a supplemental charter dated March 20th, 1883, conferring the power to grant medical degrees. Into the University thus constituted, University College, Liverpool, was admitted in 1884, and the Yorkshire College, Leeds, in 1887.

This federal constitution remained in force for some twenty years, when, first, University College, Liverpool, and subsequently the Owens College applied for charters as independent Universities. In 1903 these charters were granted, and in the following year a University charter was also granted to Leeds, and the Owens College was incorporated with the Victoria University of Manchester as it was now called, thus fulfilling the aspirations of

those who had striven to obtain a Manchester University in the seventies.

It will be convenient therefore for the reader to bear in mind in the following description these three constitutional phases:—

(1) The existence of Owens College as a University College, but not organically connected with any University (from 1851 to 1880).

(2) Its existence as a constituent College of the Victoria University from 1880 to 1903.

(3) The existence of the Victoria University of Manchester (with which in 1904 was incorporated the Owens College) from 1903 onwards.

2.—General Character of the University.

The foundation, first of the College, and later of the University, may be regarded as a result of the demand for increased facilities for higher education, which began to make itself strongly felt in England in the second half of the nineteenth century. The older Universities of Oxford and Cambridge did not supply all that the nation needed, and, from their peculiar character, were little susceptible of adaptation to meet the wants of the great industrial and commercial populations of the Midlands and the North. Oxford and Cambridge were, in the first place, too expensive; their doors were closed to all but Churchmen until the Test Act of 1871; they still require some knowledge of both Latin and Greek as a condition of admission to degree courses; to this day they exclude women from degrees, although admitting them to study and examination; and, finally, though widening and varying their courses of study as time went on, they still made no provision for teaching many of the subjects necessary for the practical purposes of modern life. It was deficiencies such as these on the part of the older Universities, combined with the stimulus given by the example of foreign countries, notably Germany and the

United States, which ultimately led to the erection of a University, the main object of which may be said to be to offer to men and women of all classes and all creeds an opportunity of University training and University culture.

Perhaps the most striking difference between Oxford and Cambridge on the one hand and a modern University like that of Manchester on the other, is that, whereas the former are national in their scope, the latter is more purely civic. In the first place, University work could never have been begun in Manchester without the munificence and devotion of Manchester men,—men like the Founder, Charles Frederick Beyer, Sir Joseph Whitworth and the Whitworth Legatees, and innumerable other donors,—or without the boundless generosity in personal effort of those who have served on the governing bodies, among whom may be mentioned George Faulkner, William Nield, Thomas Ashton, and Alfred Neild, not to mention any of those who are still with us. Thus founded and sustained by local effort, and planted at the centre of one of the most densely populated areas of the United Kingdom, the University of Manchester aspires to be the focus of all the higher intellectual and educational activities of the district on which it depends for its existence. It attains this end in various ways. For instance, the University exercises a great and increasing influence on the surrounding schools, from which it draws the mass of the students. The Matriculation Examination (which has to be passed by every candidate for a degree) acts practically as a school-leaving certificate, and largely influences the curricula of the Secondary Schools, and the numerous Entrance Scholarships tenable at the University have a similar effect. The University Training College supplies a constant stream of trained teachers who have combined their professional training with a degree course, and it would be difficult, especially in the present dearth of properly trained primary teachers, to overrate the value of this infusion into the teaching profession of a leaven of men and women whose minds have been

broadened by contact with the University atmosphere. A further means of influence is the system of inspection and examination of schools carried out by the University. Moreover, the University is in close touch with the Municipality of Manchester. Perhaps the best example of this is the amalgamation which was effected last year with the magnificently equipped Municipal School of Technology. Students of the School who attend the recognised classes can now read for University degrees (B.Sc.Tech. and M.Sc.Tech.) as students of the University. And, finally, this character of the University, as the head and centre of local educational work, finds practical recognition in the subsidies which it receives from various local authorities. The Manchester Corporation gives the University an annual grant of £4,000, the Lancashire County Council £1,000, Cheshire County Council £300, Bury Corporation £100, Oldham Corporation £150, Salford Corporation £200, Stockport Corporation £100. In a word, the Owens College created a new type of University College in which the highest kind of University training and University life is intimately bound up with the life of a great commercial and industrial centre. This, of course, does not debar it from drawing its students and its staff from the whole Empire and attracting research students from all parts of the world; and the national importance of the work which it does is indicated by the large grant from the Treasury (£14,850 in 1906), which forms a substantial part of its income. But at the same time the University preserves that essentially local and civic character of which, as it was the earliest, so it is still the pre-eminent example in England.

3.—Constitution.

The following are the chief authorities of the University as at present constituted:—

(1) The Visitor, H.M. the King.

(2) The Chancellor and President, the Duke of Devonshire.

(3) The Vice-Chancellor, Dr. A. Hopkinson.

(4) The Pro-Vice-Chancellors, Prof. Young and Prof. Lamb.

(5) The Court, consisting of the Chancellor, the Vice-Chancellor and other members, mainly representative of local bodies.

(6) The Council, which is the Executive Committee of the Court.

(7) Convocation, which consists of the Chancellor, Vice-Chancellor, Professors, members of Boards of Faculties, and all registered graduates of one year's standing.

(8) The Senate, which consists of the Professors of the University and the Dean of the Faculty of Technology (43 members).

(9) The Boards of Faculties, *i.e.*, Arts, Science, Law, Music, Commerce, Theology, Technology and Medicine.

Of these authorities the Court is the supreme body. The general administration is in the hands of the Council, while the function of Convocation is to give official expression to the opinion of the graduates of the University. On the academic side, the Senate is the most important authority, the Boards of Faculties being responsible under it for courses of study and examinations as conditions of admission to degrees. The teaching staff comprises at present about 190 Professors, Lecturers, Assistant Lecturers and Demonstrators.

4.—General Scope of the Courses of Study.

Degrees are conferred by the University in Arts (B.A., M.A., and Litt.D.), Science (B.Sc., M.Sc., and D.Sc.), Law (LL.B, and LL.D.). *Music (Mus.B. and Mus.D.), Commerce (B.Com. and M.Com.), Theology (B.D. and D.D.), Technology (B.Sc.Tech. and M.Sc.Tech.), and Medicine (M.B., Ch.B., and M.D.). All candidates are required to attend at least three years before graduation

* Manchester is famous as a musical centre, and there is a close connexion for the training of musical students between the Manchester Royal College of Music and the University.

examination, and these must be subsequent to the Matriculation Examination, which is the test of a general liberal education.

In the Faculty of Medicine candidates must attend at least five years at a recognised Medical School, of which five two at least must have been spent in the University.

In the Faculties of Arts and Science there are special Honours Schools in the following subjects:—Classics, History, English Language and Literature, Modern Languages and Literature, Philosophy, Architecture, Economics and Political Science, Oriental Studies, Celtic Studies, Mathematics, Engineering, Physics, Chemistry, Zoology, Physiology, Geology, and Botany.

The courses of study can thus be seen to fall principally under two heads—firstly, those of which the main aim is either simply to give a liberal education or to fit the student to do work which will result in the advancement of some branch of knowledge; and, secondly, those which are mainly directed towards training the student for a practical and professional career. Naturally these two aims overlap to a great extent, and indeed the University in which they did not do so,—in which the student acquiring professional knowledge did not gain something by being trained in an atmosphere where purely scientific interests flourish side by side with practical interests,—would scarcely be worthy of the name.

Reserving for the present the consideration of the contributions of the University to the advancement of knowledge, and looking for the present to the subsequent careers of the students, we find that most of them are absorbed by medicine, the great scientific professions, the two branches of the law, and the profession of teaching; many of them have entered the Church and the Dissenting Ministry (these include a Bishop and several Professors at the Nonconformist Colleges), the Army and the Civil Service. From the Chemical and Physical Laboratories a constant stream of trained scientists goes out to all parts of the world. Engineers, civil, mechanical and electrical,

trained in the Engineering Laboratories, hold responsible posts at home and abroad. Many, for instance, are serving under the Indian Public Works Department. Again, the Faculty of Commerce, which was instituted in 1903, gives a systematic training in higher commercial subjects, in the study of government and administration, and in economic and social investigation. Similarly, in the Department of Mining arrangements are made by which students, in addition to their theoretical and scientific training, are enabled to get the necessary practical experience in various coal and metal mines in the district.*

The following table will show at a glance the progress of the University since its foundation :—

STATEMENT OF GRADUATES SINCE THE FOUNDATION OF THE UNIVERSITY.

	1882—1904.	1905.	1906.	Total.
B.A.	773	42	52	867
M.A.	183	18	48	249
Litt.D.	4	—	1	5
B.Sc.	1092	81	81	1254
M.Sc.	372	35	49	456
D.Sc.	30	2	4	36
B.Sc.Tech.	—	—	9	9
LL.B.	87	9	7	103
B.D.	—	—	5	5
M.B., Ch.B.	644	36	33	713
Ch.M.	1	—	—	1
M.D.	83	12	9	104
Mus.B.	20	1	—	21
Mus.D.	3	—	1	4
				3827

* The degree in Mining (B.Sc. Tech.) is approved by the Home Secretary for the purposes of the Local Mines Regulation Act Amendment Act, under which an approved course of study may be substituted for 2 of the 5 years of practical experience required from candidates for Mine Managers' Certificates.

Total number of Degrees conferred after examination	3827
Total number of individual Graduates by examination	2954
Honorary Degrees	107
Degrees conferred by incorporation or under Charter II. (3)	39
Owens College Associates	206

5.—Original and Research Work produced by the College and University.

In his inaugural address, in 1851, Principal Scott laid down as a postulate that the highest kind of education should be entrusted to those who were concerned, not only with the mastery, but with the advancement of their own special branches of knowledge, and the University has faithfully adhered to this ideal in choosing its teachers. In the space at our disposal it would be impossible to give a full record of the original work done since the foundation of the College in 1851; but the following brief sketch of past and present achievements will show that the record includes classical work in almost every branch of knowledge.

In Classical Philology the work of the late Prof. Wilkins, of Prof. Strachan and Prof. Conway is well known to all scholars, as are Dr. Moulton's linguistic researches in the Greek of the Hellenistic period. A strong local branch (of which Prof. Conway is President) of the Classical Association has excavated the Roman fort near Glossop known as Melandra Castle, and is now engaged in uncovering the remains of the Roman station of Mancunium. In English Philology there is the work of Prof. Toller. In Celtic Studies the work of Prof. Strachan has drawn to the University a number of advanced students in this subject. Then, in pure Literature, the "History of Dramatic Literature" and other works by Dr. Ward* are

* Now master of Peterhouse.

classical; and his successors, Prof. Ralcigh,† Prof. Elton§ and Prof. Herford have all published critical work of a high order. Many members of the staff contributed largely to the "Dictionary of National Biography," edited by the late Sir Leslie Stephen. In History, thanks to the exertions of Dr. Ward and more recently of Prof. Tout, an important local school of research has been founded, and the value of the original work published not only by members of the staff but by students, has been widely recognized.* On the borderland of Science and the Arts we have the work in Philosophy and Economics of Professors Stanley Jevons, Adamson, A. W. Flux and Chapman. In this connection also may be mentioned the reports on various economic subjects, several of which have already been published, drawn up by students in the Faculty of Commerce who have been enabled by Gartside Scholarships (see p. 123) to carry out special investigations abroad. In the Department of Education the practical work of training teachers is supplemented on the theoretical side by facilities for research in educational work and child-study which can be pursued in the two Demonstration Schools attached to the University. Prof. Sadler's work, "Continuation Schools in England and Elsewhere," is largely based on an enquiry made by past and present students of the Education Department. In Chemistry, the work of Frankland for six years (including his great paper on valency and his work on the organo-metallic compounds), Roscoe's researches on vanadium and on photo-chemical actions, Schorlemmer's fundamental work on the paraffins, Professor Dixon's work on explosions, Professor Perkin's on organic ring compounds, have come

† Now Professor of English Literature at Oxford.

§ Now Professor of English Literature in the University of Liverpool.

* See the volume of "Historical Essays by past and present members of the Department," and Professor Tait's "Mediæval Manchester," both published at the University Press.

Photo by F. Ireland, *Manchester.*

THE MANCHESTER MUSEUM AND WHITWORTH HALL.

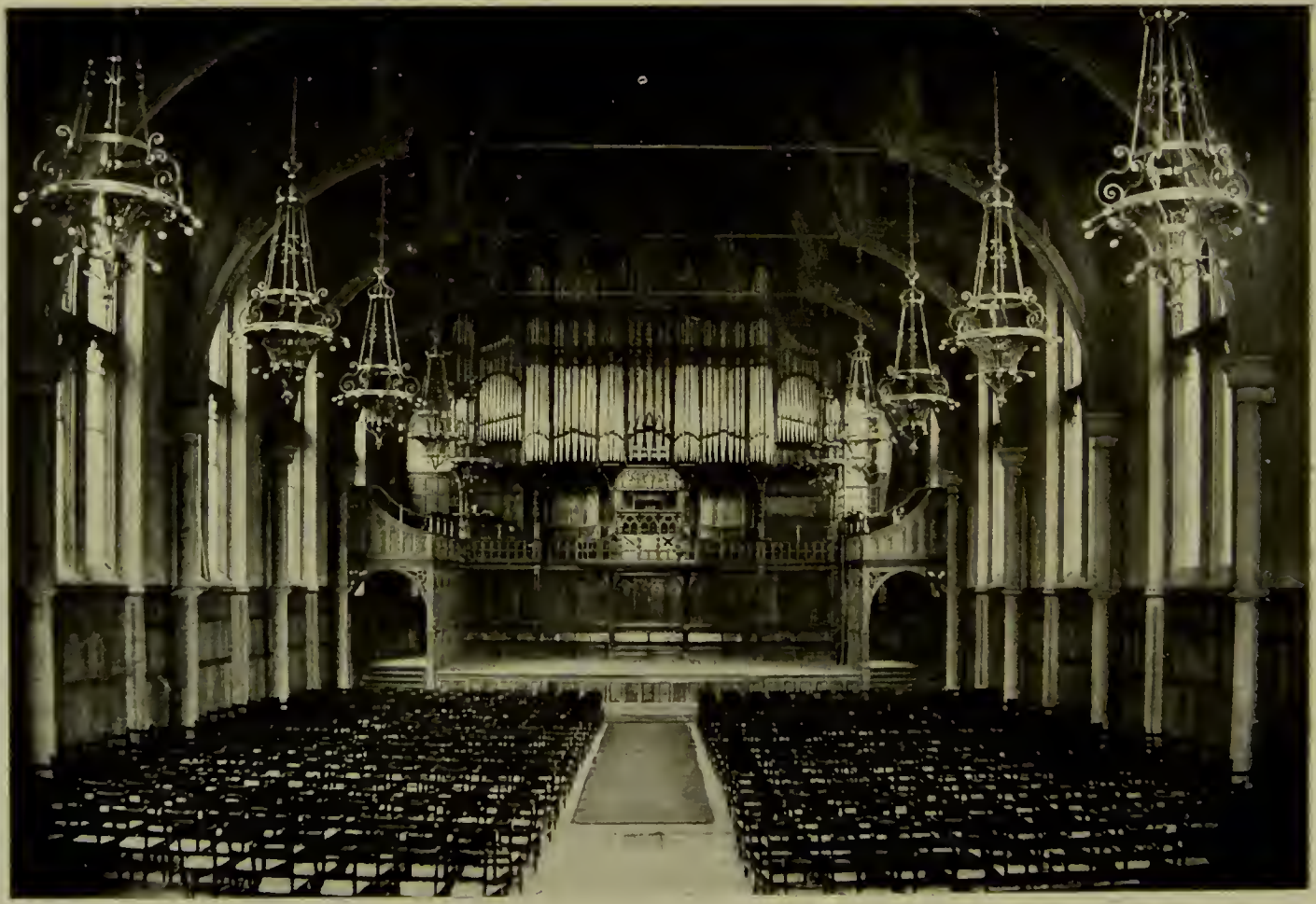


Photo by F. Ireland. *Manchester.*

INTERIOR OF THE WHITWORTH HALL, MANCHESTER UNIVERSITY.

Photo by F. Ireland, Manchester.

THE QUADRANGLE, MANCHESTER UNIVERSITY.

Photo by F. Ireland. *Manchester.*

The Whitworth Hall, Manchester University.

from the laboratories, to name only the work of those who have occupied the Chairs of Chemistry. To quote the full list of researches in this and other departments would far exceed the space at the writer's disposal. But in the Departments of Applied Mathematics, Physics and Engineering, we may refer to the researches of Professor Lamb in hydrodynamics, of the late Dr. Balfour Stewart on terrestrial magnetism, the researches of Dr. Schuster on the electrical properties of gases, and on terrestrial magnetism; those of Dr. Osborne Reynolds on molecular physics, and on almost every branch of practical engineering. In Biology and Geology are to be remembered the papers in which Williamson revolutionized fossil botany, the classical researches of Professor Boyd Dawkins on early man, the zoological work of Milnes Marshall, and his successor, Dr. Hickson, and their colleagues and pupils. The achievements in Medicine and the Medical Sciences include the work of Sir William Roberts, of Arthur Gamgee, of Morison Watson. In the annals of the Law Department figure the names of the late Chancellor Christie, of the Right Hon. James Bryce, who was Professor from 1870 to 1875, of Professors Albert Dicey and Thomas Erskine Holland; of Mr. Justice Kennedy, Mr. Edmund Robertson, K.C., Sir Samuel Hall, Dr. Crawford Munro, and of the present Vice-Chancellor, Dr. Alfred Hopkinson, K.C. Thus in almost every branch of learning the University has been actively and brilliantly productive; and the students sent by it into the world have proved the value of the training and example received within its walls. It is significant that the roll of former students includes men of the highest distinction, such as Dr. Thorpe, Chief Chemist of Somerset House and Foreign Secretary of the Royal Society; the late Dr. John Hopkinson, F.R.S.; Dr. J. J. Thomson, F.R.S., Professor of Physics at Cambridge; Dr. Poynting, F.R.S., Professor of Physics at Birmingham; Dr. Schuster, F.R.S., Professor of Physics at Owens College; Dr. Lamb, F.R.S., Professor of Mathematics at Owens College; Dr. Marshall Ward,

F.R.S., Professor of Botany at Cambridge; Dr. A. Smith Woodward, F.R.S., Keeper of the Department of Geology at the Natural History Museum. In Medicine the names of the late Dr. Leech, Sir Thomas Barlow and Dr. Dreschfeld come at once to mind. The Vice-Chancellor and seven other present Professors are also old students who hold, or have held, a large number of Chairs in Universities and University Colleges.

6.—Fellowships and Scholarships.

The endowment of Research is provided for by a number of Fellowships, by two newly-instituted Lectureships in Economic Botany and Economic Zoology, and by the Schuster Readership in Mathematical Physics. There is a Langton Fellowship of £150 a year for three years (Classics, Philosophy, History, or Modern or Oriental Languages); a Jones Fellowship in History of £150 for two years; a John Harling Fellowship in Physics of £125 for one, two or three years; a John Bright Fellowship in English Literature of £100 for two years; a Vulcan Fellowship in Engineering of £120 for one or two years, founded by the Vulcan Boiler and General Insurance Company Limited; three Junior Research Fellowships in Arts or Law, Science and Medicine respectively, each of £100 or £120 for one year; and two Junior Research Fellowships in Public Health, each of £50 for one year. In addition to these the Council has power to appoint a number of Honorary Research Fellows, who are allowed the free use of the laboratories. Research degrees have been instituted, which are open to graduates of other approved Universities. The Jevons Studentship of about £70 for one year is awarded for the encouragement of economic research; and the Gilchrist Trustees offer annually a travelling Studentship of £80 to Honours graduates in Modern Languages who are proposing to enter the teaching profession in Secondary Schools.

Research students are admitted to work in the University on special terms.

To members of the University some 35 Scholarships are open covering nearly all the subjects of instruction. The late Mr. J. H. Gartside founded a number of Scholarships in Commerce, tenable for two years, of the value of £80 for the first year, which is to be spent in the University, and of £150 to £250 for the second year, which is to be spent on the Continent or in the United States or elsewhere.

The University offers upwards of 20 Entrance Scholarships and Exhibitions, varying in value from £15 to £40 a year. There is in addition a number of Scholarships offered by local bodies to residents in their districts, tenable at the University. Technical, Commercial and Musical Scholarships, mostly of £60 a year for three years and tenable at the University, are offered by various County Councils. Full information as to Fellowships, Scholarships and Exhibitions will be found in the University Calendar, and in a special prospectus.

7.—Buildings and Equipment.*

The University buildings, chiefly gothic in character, and designed by Messrs. Waterhouse and Son, occupy an irregular area of 240,000 square feet, bounded on the east by Oxford Street, on the north by Coupland Street, on the west by Lloyd Street, on the south by Burlington street. The oldest portion is that on the west side of the front quadrangle, and in it are contained all the lecture theatres and class-rooms belonging to the Faculties of Arts, Law and Music, besides administration offices and common-rooms. The southern half of the east or Oxford Street frontage contains the beautiful Whitworth Hall, which was opened by the Prince of Wales in 1902, and has a seating capacity of about 1,200. The rooms on the ground floor beneath the Hall serve as committee and as lecture-rooms and also as offices for the Joint Matriculation

*This sub-section is contributed by Mr. James Grier, M.Sc.

Board. On the south side of the quadrangle, between the Whitworth Hall and the main building, stands the Christie Library, which contains some 97,000 volumes. This building is of three storeys, the basement being devoted to history, literature, law, philosophy and economics, and the second storey to science, whilst the first floor is occupied by the large reference library and reading-room. The library contains some rare books and a number of works of Art, but its chief object is to amass books of actual service to students. It is particularly rich in periodicals; it has also acquired a number of actual working libraries of scholars, among which may be mentioned that of Bishop Lee (mainly local history and classics), Professor Freeman (mediæval history), Professor Stanley Jevons (economic history), Professor Adamson (philosophy), Dr. R. C. Christie (bibliography), Professor Muirhead (law), Professor Milnes Marshall (zoology), and Professor Marillier (comparative religion).

The northern half of the frontage to Oxford Street is occupied by the Manchester Museum, on which a sum of about £3,000 is expended annually, of which sum £400 is provided by the Manchester Corporation and about £120 a year by private subscription. The north side of the quadrangle, between the Museum and the main building, is occupied by the Beyer building, in which the Natural History Laboratories are housed, the Geological Laboratories on the ground floor, and above them the Botanical and Zoological Laboratories, all being in direct communication with the Museum collections. These collections serve a double purpose: they are used in the teaching of students, and they are also intended for the instruction of the general public. The ground floor of the Museum contains geological, mineralogical and petrological collections, and the first floor on the east side the collections from the Tertiary Deposits, and on the west side, the Mammalia. The hall on the first floor is fitted with galleries in which the remainder of the Vertebrata and the Invertebrata are displayed. The botanical collections

occupy rooms leading off these galleries. There are also extensive ethnographical, archæological and Egyptian collections in the Museum. Free popular courses of lectures are given here throughout the year by Professor Boyd Dawkins, Professor Hickson and Professor Weiss, who act as scientific superintendents of their respective departments of the Museum, and by the Director, Dr. W. E. Hoyle. The building is excellently lighted by electric light reflected, in the first instance, on to the white ceiling. The illumination obtained resembles that of daylight, so that a person standing before a showcase casts no shadow on its contents. The Museum buildings and the Biological Laboratories were opened in 1887. The Faculty of Science, as befits a large industrial centre, is the largest in the University, and in addition to the Departments of Natural History, just described, there are the larger ones of Chemistry, Physics and Engineering.

The Manchester School of Chemistry, founded by John Dalton, and afterwards associated with the names of William and Charles Henry, Angus Smith, Crace Calvert and Edward Schunck, had already, in 1851, on the founding of Owens College, gained for itself such fame that the trustees of John Owens determined to establish a Chair of Chemistry, and the first occupant of the Chair was Edward Frankland, afterwards Sir Edward Frankland. He was succeeded in 1857 by Henry Enfield Roscoe, now Sir Henry Roscoe, who for thirty years directed the work of the Department and built up a School of Chemistry that made Owens College known all over the world. The teaching staff during that period included the names of such distinguished chemists as Guthrie, Dittmar, Thorpe and Schorlemmer who in 1874 became Professor of Organic Chemistry, the first appointment of the kind in this country. The Chemical Laboratories are very extensive, and occupy a series of buildings extending along Burlington Street, behind the main building. They include the two large Roscoe Laboratories, for first and second year students, designed by Roscoe, and opened in 1875, and

the Schorlemmer Organic Laboratory, for third year students, opened in 1895. In addition to these, the old Physical Laboratories in the basement of the main building have been annexed, and under the title of the Frankland Laboratories are devoted to work on Physical Chemistry. The Schunck Laboratory and Chemical Library, bequeathed to the University by the late Edward Schunck, and removed from Kersal to be erected on its present site, is devoted entirely to research work, and was opened in 1904 by Dr. W. H. Perkin, sen., after whom has been named the most recent extension of the Department, the Perkin Laboratory for Organic Research. The Thorpe Laboratory is also devoted to research work in Organic Chemistry, and there is also a well-equipped Dyeing Laboratory. Quite recently, with the aid of a benefaction from Lord Strathcona, a Chair of Metallurgy has been founded, and the Metallurgical Laboratories, including the Behrens Laboratory, have been enlarged and re-equipped, mainly with a view to post-graduate and research work on the structure and properties of steel and other alloys.

The Engineering Department is inseparably associated with the name of Sir Joseph Whitworth. It originated in 1866, when the engineers of the City, recognizing the value of the work that was being done by the old Owens College, and being desirous that their own profession should share the benefits, subscribed £9,500 for the establishment of a Chair of Civil and Mechanical Engineering, and their action led to the appointment of Professor Reynolds in 1868. In the same year the Whitworth Scholarships were established, and on the death of Sir Joseph Whitworth in 1887, the trustees of the great engineer gave a donation which covered the cost of an Engineering Laboratory which had just been erected. It was one of the first of its kind, and is now known as the Whitworth Engineering Laboratory. It is a separate building, twenty feet in height, occupying the ground lying between the main building and the Medical School, and is divided by

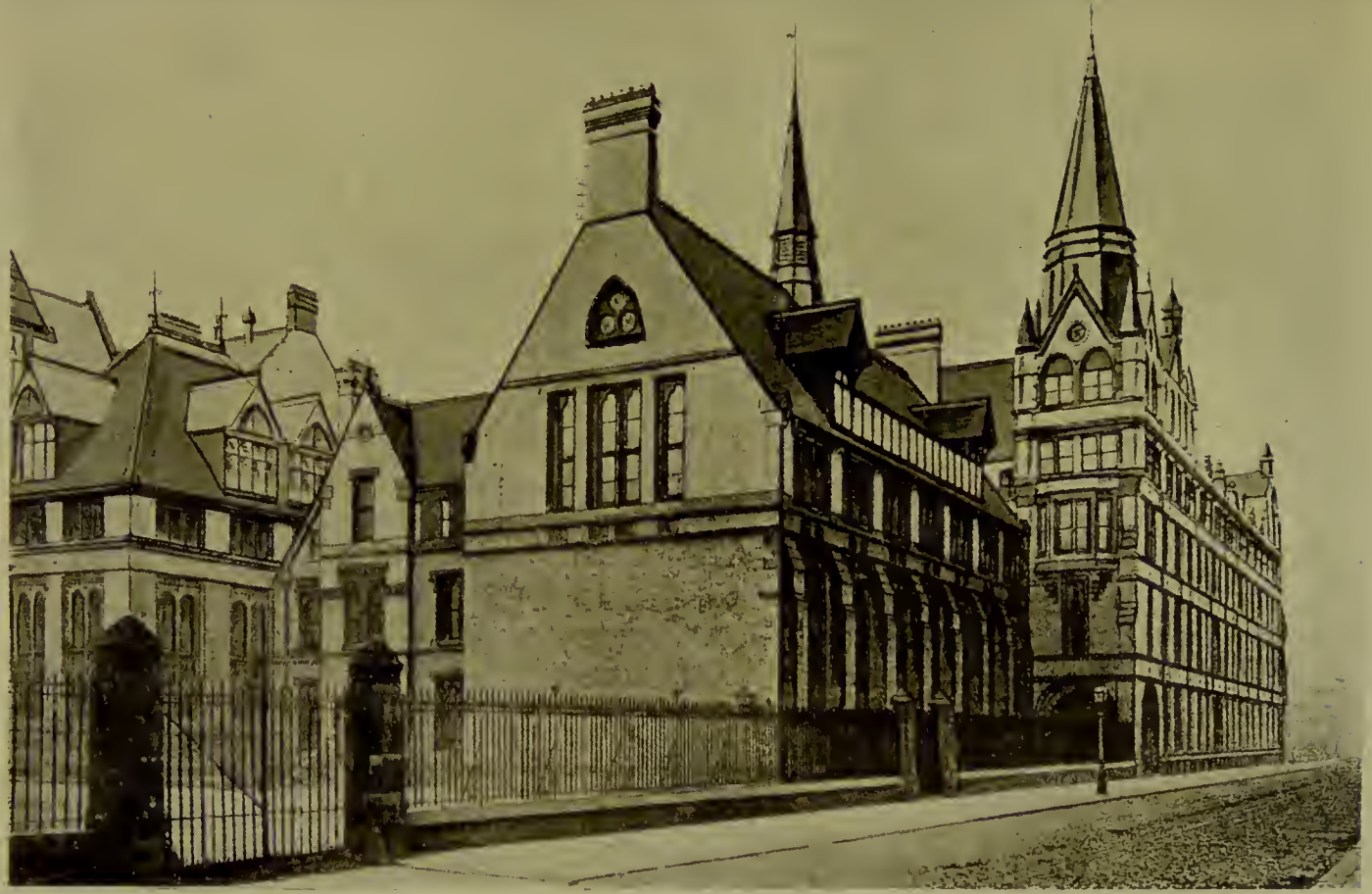
glass partitions into five compartments, boiler room, engine room, testing room and smithy. It contains all the apparatus necessary for instruction in the various branches of engineering science, including boiler working with chimney or forced draught up to 200 lbs., triple condensing experimental engine of nearly 100 horse-power, designed expressly for the Laboratory by Professor Reynolds, tanks for hydraulic experiments, and a Wicksteed testing machine working by hydraulic pressure up to 100 tons. Mechanical drawing is taught in the large enginering drawing room in the main building.

The Department of Physics, like that of Chemistry, dates from the foundation of Owens College in 1851, when A. Sandeman was appointed Professor of Mathematics and Natural Philosophy, and since then the teaching staff has given Professors to the Universities of Oxford, Glasgow and Birmingham. The first practical laboratory work was organized in 1870 by the late Professor Balfour Stewart on his accession to the Chair of Physics, which he held until 1887 in conjunction with Professor Core. The new Physical Laboratories, including the John Hopkinson Laboratory of Electro-Technology and Electro-Chemistry, were erected in 1900, at a cost of £37,000, and are among the largest and best in the country. They occupy a site on the north side of Coupland Street, and were planned and organized by Professor Schuster, who is now being succeeded by Professor E. Rutherford, recently of the McGill University, Montreal. Extensive provision has been made for original research in Optics, Radio-activity, Meteorology and other special branches of Physics. Amongst the special equipment the following may be mentioned:—A 10-inch refracting telescope, a large Rowland diffraction grating, plant for the production of liquid air, of 60 to 70 milligrams of the most active preparation of radium bromide and apparatus for researches under high gaseous pressure. Considerable space is moreover devoted to the equipment for advanced study in Electrical Engineering and Electro-Chemistry, the dynamo

house and plant for high temperature work with electric furnaces being noteworthy. In connection with the Department of Physics, a meteorological observatory is maintained in Whitworth Park, about half a mile from the University, and a station for flying kites carrying meteorological instruments for the investigation of the upper air on the Derbyshire moors.

Certain University classes, viz., those in the Faculty of Technology (see p. 115) are held at the Municipal School of Technology in Sackville Street. The equipment of the School is described on p. 104.

The Medical School of the University of Manchester occupies the western portion of the University site with its front on Coupland Street. It is the present-day representative of the Manchester Medical School which was founded in 1824–5 by Mr. Thomas Turner, F.R.C.S., in Pine Street, just behind the Royal Infirmary. This was the first medical school to be established in the provinces, and in 1836 it was permitted by William IV. to attach the prefix "Royal," becoming the "Manchester Royal School of Medicine and Surgery." The year 1851 witnessed the opening of Owens College, the first provincial University College in England, with which in 1873 the Manchester Royal School of Medicine and Surgery was amalgamated, and in the same year the College was transferred from the old buildings in Quay Street to its present site. The new College buildings were opened in October of that year, and the new Medical School buildings in October of the following year by Professor Huxley. These latter were added to in 1883, and again in 1891–4, the accommodation being almost doubled on both occasions, while, in order to keep pace with the rapid growth of the School, new Chairs and Lectureships were created as necessity arose, both in the purely scientific and in the medical subjects. The year 1881 saw the inauguration of the Victoria University with power to grant degrees in Arts, Science and Law. The power to grant medical degrees was conferred on the Victoria University two years later, in



The Medical School, Manchester University.

Photo by H. G. Drummond.

MATERIA MEDICA MUSEUM, MANCHESTER UNIVERSITY.

1883. In 1884, under the influence and by the material support of the late Professor D. J. Leech—the first Professor of Materia Medica and Therapeutics—a Pharmaceutical Department was organized and fully equipped in the Medical School, and it has been carried on continuously since then as part of the Department of Materia Medica. Full courses of instruction are given for the examinations of the Pharmaceutical Society for the qualifications of pharmaceutical chemist and of chemist and druggist. In the same year a Dental Department was added to the Medical School, and in the following year the Victoria Dental Hospital was recognized by the Council of the Royal College of Surgeons as a hospital for instruction in Dental Surgery. In 1904, shortly after the reconstitution of the University, the subject of "Pharmacy" or "Pharmaceutics" was added to the list of subjects which may be presented for a degree in Science (Ordinary and Honours), and in 1905 the degrees of B.D.S. and M.D.S. (Bachelor and Master of Dental Surgery) were instituted. In 1888 a Department of Public Health was founded, and, owing to the great increase in the work, a new Public Health Laboratory was erected in York Place in 1904. The new buildings were opened in January, 1905, and here bacteriological work is conducted for many municipal and other authorities. In connection with this Department courses of instruction are given for the Diploma in Public Health and for the degree of B.Sc. in Public Health, as well as for the Diploma in Veterinary State Medicine of the University. Courses are also given in the analysis of foods, water, etc., for those students in the Honours School of Chemistry who select Sanitary Chemistry as a special subject, as well as in Biological Chemistry. Courses of instruction for sanitary inspectors are given at the Manchester Municipal School of Technology and at the Royal Technical Institute of Salford, but the examination for the certificate is held at the University.

Of the various departments which are housed in the Medical School the Anatomical Department includes, be-

sides its lecture and demonstration theatres, the dissecting rooms with a special one for women students, also the Museum of Comparative Anatomy, which contains the anatomical collection of the old School of Medicine, presented in 1875 by the executors of Mr. Turner.

The Physiological Department is reached from the main corridor, and occupies three floors at the western end of the building. The Laboratory for Physiological Chemistry is on the ground floor, that for Experimental Physiology on the first floor, while on the second floor, besides various smaller rooms for special work, is the large Histological Laboratory. This laboratory, which is perfectly lighted from three sides as well as from the roof, has floor space for 120 workers and a gallery for 40 more. Although there is no actual museum for physiology, there is a large collection of specimens for demonstration purposes, in addition to a fine collection of models and apparatus for teaching purposes. There is also a reference library known as the Platt Physiological Library.

The Pathological Department adjoins the Physiological, and contains a large laboratory for practical pathology and bacteriology with accommodation for 90 students. There are also special laboratories for research and post-graduate work in addition to the private rooms for the Professor and his assistants. A gallery of the Medical Museum is devoted to pathological specimens which have recently been catalogued and arranged in a thorough and systematic manner. The two large lecture theatres, known as the Physiology and the General or Pathology Lecture Theatres, the former capable of seating 400 students, and the latter 300, are on the ground floor, and open out on the main corridor, which is adorned with the busts of men famous in medical science. The subject of Comparative Pathology is taken at the Public Health Laboratories in York Place and also the more advanced and specialized work in Bacteriology.

The Department of Forensic Medicine and Toxicology is also situated in the newer or western portion of the

building, and is well laid out, the Toxicological Laboratory being one of the finest in the country.

The Pharmacological and Obstetrical Departments and the Departments of Medicine and Surgery, along with the Anatomical Department, occupy the older portion of the building. Here are also located the rooms and library of the Manchester Medical Society, the library comprising nearly 33,000 volumes.

The Pharmacological Department or Department of Materia Medica, which includes the Pharmaceutical Department, contains two laboratories, the Pharmacological and the Pharmaceutical, the Museum of Materia Medica, and the Leech Library, in which is housed the large collection of works on Materia Medica, Pharmacy, Pharmacology and Therapeutics belonging to the late Professor D. J. Leech, and presented by his widow.

The Obstetrical Department with lecture theatre, and the Departments of Medicine and Surgery adjoin. The Obstetrical Department contains a large collection of mounted specimens which will eventually form a museum of obstetrics and gynæcology, also an interesting collection of ancient and modern obstetrical instruments.

The other departments of the Medical School are in charge of lecturers, and include Mental and Nervous Diseases, Diseases of the Skin, Ear, Larynx, and Heart, Ophthalmology, Tropical and Infectious Diseases, and Diseases of Children, the clinical work in connection with these various subjects being taken at the Royal Infirmary and the various hospitals, such as the Royal Eye Hospital, Oxford Road; the Royal Lunatic Asylum, Cheadle; the Hospital for Skin Diseases, Quay Street, the Hospital for Diseases of the Throat, Hardman Street; the Ear Hospital, Byrom Street; the Children's Hospital, Pendlebury; Monsall Fever Hospital; St. Mary's Hospitals, and the Northern Hospital, for Women and Children; the Christie Cancer Hospital; and the Ancoats General Hospital. Dental students, as already mentioned, receive their practical training and clinical experi-

ence at the Victoria Dental Hospital, which is being re-built on a site in Oxford Road, adjoining the University. The valuable Museum of the Manchester Odontological Society, is located at this hospital, where there is also a teaching museum, and the complete course of training in mechanical as well as operative dentistry may be taken at the hospital. The Royal Infirmary in Piccadilly contains 292 beds; the in-patients number 5,000 per year, the out-patients 29,000; the accidents exceed 14,000, and about 2,800 operations are performed annually. Students who enter the Medical School in October of this year will have the advantage of completing their clinical work at the new Royal Infirmary, now in course of erection on a site conveniently near the University opposite Whitworth Park, and which will be among the most perfectly equipped of modern hospitals. It will contain 600 beds, and will consist of eight large wings besides other buildings occupying an area of $12\frac{1}{2}$ acres, and is in striking contrast to the first Royal Infirmary, founded in 1752, with accommodation for only twelve patients, with the founding of which the history of medical education in Manchester may be said to begin.

8.—Social Life of Students.

The total number of students in the various Faculties of the University during the Session 1905–6 was 1,371. Of these 307 were medical students, and 278 were women students. The University is not residential like the older English Universities, the great majority of the students living in Manchester, either with their families or in lodgings, or coming in daily to their work from the surrounding district. There are, however, four Halls of Residence attached to the University: for men, Dalton Hall (Victoria Park) and Hulme Hall (Plymouth Grove), and for women, Ashburne House and the Victoria Church Hostel. These provide for students whose homes are at a distance from Manchester a collegiate home, with a supervision similar to that of the older Universities. But

within the College itself an active social life goes forward. *Esprit de corps* and habits of organization and co-operation are fostered by the Students' Unions and by the Students' Representative Council,—a body which is part of the constitution of the University and affords the recognized means of communication between the students and the University authorities. Staff and students meet on equal terms in the many societies of the University: the Medical Students' Debating Society, the Literary Society, the Chemical Society, the Biological Society, the Engineering Society, the Historical Society, the Physical Colloquium, the Philosophical Society, the Musical Society, the Dramatic Society, the Photographic Society, the Literary Circle, the Theological Society, the Sociological Society, the Classical Society, and the two Christian Unions (Men and Women). Most of these societies form part of the Students' Union. Besides these there are clubs for Rugby and Association football, cricket, lacrosse, tennis, fives, swimming and hockey, most of which are included in the University Athletic Union; and there is a Women Students' Athletic Union, in which a hockey club and a lawn tennis club have been incorporated. The athletic ground, of about 12 acres, which was presented by the devisees of Sir Joseph and Lady Whitworth, is within easy reach of the University, and enables games to be played under the best conditions. It is furnished with a convenient pavilion. There is an efficient Volunteer Company, under the command of Professor Capper. The generosity of Mr. Edward Holt provided the University with a gymnasium, which stands behind the Chemical Laboratories, abutting on the Medical School.

As to the cost of the University courses, it would be impossible to state here the precise fees for every combination of classes, as alterations are usually allowed in the courses leading up to a degree. But it may be said that normally the course for the ordinary B.A. degree will cost about £20 a year, and that for the ordinary B.Sc. degree from £20 to £30 according to the subjects selected, while

the full three years' course for the LL.B. degree will work out at about £22. The average cost of courses in the Honours Schools is slightly higher. Students seeking a medical degree pay about 25 guineas for the course for the First M.B. Examination, and for the remainder of the medical course they may pay a composition fee of 70 guineas; a composition fee of 83 guineas admits to the full course of medical study required by most of the examining boards. The hospital fee for the whole course is £42. In estimating probable expenses it should be remembered that there are also certain fees for admission and registration, and fees for University examinations and for the conferment of degrees, as to which full information will be found in the University Calendar.

CHAPTER X.

ART IN MANCHESTER.

By J. ERNEST PHYTHIAN.

THE most devoted Mancunian would not claim that his native city had clothed herself with beauty as with a garment. Rather might she seem to have put on sackcloth and covered herself with ashes, to do penance for the crude, unsocial economics of the Manchester School. Art does not pervade the city. It has carefully to be sought after. So we do not speak of the art *of* Manchester, as we speak of the art of Florence or of Venice, but simply of art *in* Manchester. And such art as there is cannot be claimed by the city as her own, in the sense in which her cotton manufacture is her own; it is an importation, not the outcome of her own activity. Art, as a thread, or a number of threads, that ought never to be omitted from the web of life, forms no part of the Manchester creed and practice, Hence, for instance, though the city has many large, and some fine buildings, they could hardly have been more successfully scattered about on sites where they could be seen to the least advantage, if such an undesirable result had been zealously aimed at. The squares and other open places are few in number and poor in kind. The streets are nearly all narrow. The damp and smoke-laden atmosphere has blackened all the buildings. Consequently even the principal parts of the city look mean and dingy. As to the parts of the city where the majority of the inhabitants live, they are completely devoid of art, and unspeakably dull and dreary. This almost goes without saying when

it is notorious that Manchester has a very high death-rate, due in considerable measure to bad housing-conditions. Art was not likely to be considered when the elementary conditions of health and decency were left out of account. But the visitor who comes to Manchester from any other large place that became large in the earlier part of the nineteenth century, will not be able to throw any very big stones at Manchester. For the deficiences above confessed are, in greater or less degree in individual instances, the deficiences of the national life and ideal.

To the buildings in Manchester that can claim to be works of art, reference is made in other chapters of this book. It is enough to say here that some of them represent the classical revival in architecture; some of them the Gothic revival; and some of them the bewilderment of the architect, when, scorning revival and finding no general advance in some definitely new direction, he is under the necessity of building something "entirely out of his own head." In this, again, Manchester differs little from other cities. In one respect, in the alliance of painting with architecture, Manchester has accomplished one really great success in the historical paintings by Ford Madox Brown in the Town Hall, which no visitor should fail to see.

Nor, again, is Manchester much worse or much better than other places in its open-air memorial statuary. The statue of Oliver Cromwell, by Noble, is exceptionally good; Mr. Onslow Ford's statue of her late Majesty, Queen Victoria, misses being a good work by reason of that ill-combination of sculpture and architecture which is almost a besetting sin of British art. The rest of our statues may be more or less satisfactory portraits of men who deserved to be honoured, but—and perhaps our modern costume must take some of the blame here—they are not things of beauty upon which the eye loves to dwell. Two

monuments, however, which are not in the open air, will not only have an interest to men of science visiting Manchester, but also represent admirably two periods and schools of British sculpture—Chantrey's statue of John Dalton and Mr. Gilbert's statue of Joule, which face each other just inside the main entrance to the Town Hall.

In architecture and monumental sculpture, then, Manchester can claim a certain number of successful examples, but has been very far from employing these arts so that the general result is dignified and impressive, such an achievement being too far outside the range of practical civic politics—if the expression may be allowed—ever to have been attainable.

If Manchester has anything that pertains to art to teach the visitor, it must be sought chiefly in her collections, not in her creations. And in this respect the visitor will probably find he has something to learn; at least, if he care for art, he will find something, nay, much, to interest him. Two temporary collections in Manchester of works of art, we may remind the reader, are landmarks in the history of such exhibitions in this country—the Art Treasures Exhibition of 1857 and the pictures in the Jubilee Exhibition of 1887.

Manchester possesses five Art Galleries and Museums to which the public has free admission. In one respect at least, up to the present time, the visitor will learn from these institutions what to avoid. Each of them until quite recently has been under separate management, and they have not only made no serious attempt to work together, but in many ways have overlapped and competed with each other. The reason for this state of things is not far to seek. Art plays so small a part in our daily life and work that it needs to be "encouraged." This encouragement is mainly a matter of individual interest and effort; and the

Art Galleries and Museums of Manchester have been created by separate exercises of such effort. Various individuals and committees have had varying ideas, or lack of ideas, as to what required to be done and how to get it done; and there has been a general running off into corners with schemes of one's own. Probably this might have been avoided had the municipality as a whole been capable of taking an intelligent interest in art. But this could not be in the absence of that general interest in art the lack of which has necessitated these very efforts to encourage it. Candidates for the City Council do not get heckled about their opinions on and projects for the gratification of a widespread love of art. However, there is some recognition of the waste occasioned by this lack of co-ordination, and there is some chance of a better condition of things within the usual length of time that it takes councils and committees to set about and accomplish a thing when once they have seen it to be desirable. One step in the right direction, as the next paragraph shows, has already been taken.

Meanwhile four out of these five institutions are worth visiting. The fifth, the Queen's Park Museum, which has recently been transferred from the Parks Committee of the Corporation to the City Art Gallery Committee, is being reorganized under the new control, and paintings that cannot be shown in the central gallery owing to lack of space are being placed there, and temporary exhibitions are also being arranged. It is proposed to form a series of branch galleries, under the same control, in various parts of the city. Part of the hall at Heaton Park, the largest of the Manchester parks, is already being used in this way.

The art gallery that the visitor to Manchester is most likely to see is the City Art Gallery in Mosley Street. This is nominally the principal art gallery in the city.

We say nominally, because the narrow limits within which its collections and the greater number of its periodical and occasional exhibitions have been confined render it less useful in some ways, and even, perhaps, as a whole, than others of the galleries, to the student of art in a sufficient sense of the word. If not the oldest, it is at least one of the oldest of provincial art galleries; it was built in 1829, from designs by Sir Charles Barry, the cost being defrayed by public subscription, was vested in a body of Governors, became the Royal Manchester Institution, and was devoted to "the promotion of Literature, Science and the Arts." From the outset annual and occasional art exhibitions were held in its galleries—than which, for their size, there are no better and more dignified ones in the country—lectures were provided, and a school of art was housed in some of the rooms. It was hoped that the profit on the exhibitions would be sufficient to provide for the formation of a permanent collection of works of art; but as this hope was not realized to any adequate extent, and as the Governors felt that such a collection ought to be formed if possible, negotiations were opened with the Corporation with the result that in 1882 the gallery, with such works of art as it contained, was transferred to the Corporation, on the condition that for a period of twenty years the sum of £2,000 should annually be provided out of the rates for the purchase of works of art, while the Governors of the Royal Institution retained certain rights and privileges, including the right to nominate seven members of the committee having control of the gallery. This arrangement has proved to be a great boon to the community. Not only have the annual and other exhibitions continued to be held, but the works of art purchased, with the addition of numerous and valuable gifts, now form one of the principal collections of paintings by British artists

in the country. We have referred to the narrow limits set to their work by those responsible for the management of the gallery. By this we mean that they have given their attention to little besides painting, sculpture having received hardly more than nominal recognition, and the other arts and crafts having been almost entirely neglected. But painting has gained by this limitation, the collection being much more representative of that branch of art than would otherwise have been possible. No one who is conversant with the high prices that prevail in the picture market will be surprised that the Committee has restricted itself to British Art, nor that its collection of works by the earlier masters is small, and includes but few examples of first-rate importance. Still there are works by Lely, Hudson, Reynolds, Gainsborough, Romney, Raeburn and others in portraiture, and by Wilson, Morland, Turner, Calcott, John Linnell, Crome and others in landscape, which illustrate, if as yet inadequately, the character of earlier British painting. The pre-Raphælite movement is well illustrated by some of the chief works of Ford Madox Brown, including his "Work" and "Cromwell, Protector of the Vaudois"; of Holman Hunt: "The Shadow of Death," "The Hireling Shepherd" and the smaller version of "The Scapegoat"; of Millais: "Autumn Leaves" and later works; and of Rossetti: "Astarte Syriaca." By G. F. Watts there are "Prayer," "The Good Samaritan" —the latter a gift from the artist,—and two portraits. Lord Leighton is represented by "Captive Andromache" and "The Last Watch of Hero"; Burne-Jones by "Sibylla Delphica"; and there are important examples of the art of Cecil Lawson, Henry Moore, John Brett, Peter Graham, Briton Riviere, Luke Fildes, J. W. Waterhouse and many other painters. A collection of water-colour drawings is at present, owing to want of space, only at times exhibited

in the Gallery and at other times elsewhere; for the growth of the permanent collection has rendered the city galleries far to small for the uses which they have to serve, and, before long, either the existing galleries will be added to on adjoining land, or entirely new galleries will be built. When this is done the scope of the collections and exhibitions will be extended, as the Corporation obtained power, five years ago, permanently to continue the annual grant of £2,000. Mr. T. Greg, and Miss Philips, have recently enriched the Gallery by the gift of valuable collections of English pottery. It may be mentioned that the average daily number of visitors to the permanent collection is about 1,200.

The Whitworth Gallery, already incidentally mentioned, is situate in the Whitworth Park, Oxford Road, and has been established by Mr. R. D. Darbishire, one of the residuary legatees of the late Sir Joseph Whitworth. Mr. Darbishire has associated with himself a large number of Manchester citizens interested in art, by whom the gallery is managed under a Charter. Its collections are more varied than those of the City Art Gallery, and include painting, sculpture, textile fabrics, and examples of several of the minor arts and crafts. The oil-paintings include Mr. G. F. Watts's "Love and Death," a gift from the artist, and good examples of John Linnell, J. T. Linnell, J. F. Lewis, T. Creswick, Sam Bough, Clarkson Stanfield, J. C. Hook, Peter Graham, G. H. Boughton, and other painters. The collection of water-colour drawings, many of which were the gift of the late Mr. J. E. Taylor, is especially fine, and illustrates very completely the early history of the art in this country. There are three fine pieces of tapestry worked under the supervision of William Morris from designs by Burne-Jones; and the collections include numerous reproductions, in engraving or photography, of

the works of the older and the modern schools of painting. There is also an art library; and lectures on art and literature, to which the public are admitted free of charge, are given during the winter season.

In the working-class district of Ancoats, in an old hall, long since surrounded by factories, an Art Museum was established over twenty years ago by Mr. T. C. Horsfall and a committee which he gathered round him. It has been amalgamated with a University Settlement, and has become the centre of a great variety of social, recreative and educational work. The art collections consist of original pictures, copies, photographs, engravings and other reproductions, which illustrate systematically the history of architecture, sculpture and painting, and of casts of sculpture, examples of textiles, pottery, metal work, and other products of the minor arts. Sets of pictures have been formed, and are lent to elementary schools. This museum should be visited by all who are interested in the educational use of art.

A museum has been added to the Municipal School of Art in Cavendish Street—the school that originally had tis habitation in the Mosley Street Art Gallery, and which, after being housed in a new building, was transferred to the Corporation. This museum contains an admirable collection of casts from Gothic and Renaissance architecture and sculpture, and also many examples and copies of the best work in the minor arts and crafts. Though primarily intended for the use of the students in the school, anyone wishing to visit it can do so.

From this enumeration and brief description it will be seen that, if the Manchester Art Galleries and Museums are not all that they should be, there is plenty of material with which to work to a better result. At any rate, we think, and we do not write without knowledge, that no

other provincial city is better, if as well equipped, in this respect, and as a Society of Friends of Art has been formed in Manchester, the work is likely to advance more rapidly in future.

It should be added that Salford, one with Manchester except in municipal government, has Art Galleries and museums at Peel Park and Buile Hill, containing large and varied collections.

We should perhaps say, in conclusion, that the professional artists in Manchester have their appropriate associations; there is a Society of Architects; the painters and sculptors, many years ago, formed the Manchester Academy of Fine Arts, and the revival of the crafts in recent years has been marked locally by the formation of the Northern Art Workers' Guild.

CHAPTER XI.

COMMERCIAL AND INDUSTRIAL MANCHESTER.

By the Late ELIJAH HELM, M.A.

Revised by WALTER SPEAKMAN, *Secretary of the Chamber of Commerce.*

THE notion, widely entertained by many who know Manchester only by repute, that it is a place given up almost exclusively, or at least mainly, to the production and distribution of cotton manufactures is entirely erroneous. In the first half of the last century its population was, indeed, so fully engaged in the cotton industry as to give some sort of warrant for this idea. It It is still "Cottonopolis," in the sense that it possesses the largest market in the world for cotton manufactures, but it is no longer a very important producer of them. There are, it is true, many cotton mills in the city and in the immediately adjacent borough of Salford, sufficient of themselves to employ the inhabitants of a large town, but these are altogether of inconsiderable magnitude when compared either with the British cotton industry as a whole, or with the other various activities of the great community gathered within the boundaries of the conjoint areas. The spinning, weaving, bleaching, printing, dyeing and finishing of cotton fabrics in Great Britain are now for the most part carried on in numerous towns, great and small, lying within a radius of thirty miles from Manchester, which is their commercial centre.

The cotton industry of the United Kingdom is much more highly differentiated than that of any other country. Not only is the variety of the productions much greater,

Photo by J. Cleworth, M.Ph.S.

PUBLIC HEALTH LABORATORY, MANCHESTER UNIVERSITY.

Photo by J. Cleworth, M.Ph.S.

PUBLIC HEALTH LABORATORY, MANCHESTER UNIVERSITY.

Photo by Wm. Baldry. *Grasmere.*

THIRLMERE, SHOWING THE DAM (looking South).

but also the several branches of the industry are specialised to a degree not known elsewhere. In the first place, the two operations of spinning and weaving are, in the main, separated, being conducted to a great extent in different Thus spinning is largely concentrated in South Lancashire, and in the adjoining border-land of North Cheshire. But even within this area there is further allocation. The finer and the very finest yarns are spun in the neighbourhood of Bolton, and in or near Manchester, whilst other descriptions are produced in Oldham and other towns. The weaving branches of the industry are chiefly conducted in the northern half of Lancashire—most of it in such large boroughs, as Blackburn, Burnley and Preston. Here, again, there is differentiation. Preston and Chorley produce the finer and lighter fabrics; Blackburn, Darwen and Accrington, shirtings, dhooties and other goods extensively shipped to India; whilst Nelson and Colne make cloths woven from dyed yarn, and Bolton is distinguished for fine quiltings and fancy cotton dress goods. These demarcations are not absolutely observed, but they are sufficiently clear to give to each town in the area covered by the cotton industry a distinctive place in its general organization.

There are obvious advantages in all this differentiation. One of them is that it facilitates excellence of quality and abundant production, the workpeople and the whole of the staffs employed at the mills—from the managers downward—becoming trained and highly skilled in the manufacture of the particular classes of goods to which their attention is exclusively and continuously directed. Indeed, this mode of organization is absolutely essential to the success of the British cotton industry, because of the great diversity of taste, of climate, and of buying power of the numerous races and peoples in the world-wide markets to which British cotton manufactures are sent.

But although Manchester is now of comparatively small importance as a seat of cotton spinning and weaving it

has drawn to itself, during the last half-century, a large number of other industries. Within a few miles of the Royal Exchange factories of many kinds abound, some of them of great magnitude. Iron, steel, and other metal industries are numerous. Engineering establishments produce steam and gas engines, locomotives, boilers, spinning, weaving, calico printing, dyeing, bleaching, letterpress and mining machinery. Glass, ordnance, artillery ammunition and railway waggons, as well as electrical plant and materials, structural steel and wire are also manufactured on an extensive scale. The hat industry of the district, as well as that of indiarubber goods, is probably the most extensive in the kingdom. The clothing factories are important and increasing, and the production of chemicals of various descriptions—fine and coarse—has become exceedingly prominent in the Eastern outskirts of the city. To this list several other industries might be added, some of long standing, and others of recent introduction. Until about 40 years ago there was, in and around Manchester, a flourishing silk manufacture, but of this hardly a remnant now survives.

The commercial, as distinguished from the industrial, aspect of Manchester life, and especially its foreign trade, demands particular attention. A century ago, when Manchester was little else but a town of cotton mills, there were very few merchants engaged purely in the distribution of manufactures. The manufacturer was his own merchant, selling his goods to customers at home, or in the Netherlands, Spain, Italy and elsewhere. The weaving of textiles was done in hand-looms, for the power-loom was then but just on the point of being introduced. Manufacturers either spun or bought the yarn they used, and gave it out to weavers in and around the town. Others had warehouses in remoter towns or villages, where the same process was carried on. Cotton weaving was then a domestic industry, the weavers usually owning the wooden looms upon which they worked, accounting to the manufacturer for the yarn taken home in the shape of the cloth and waste returned,

and receiving payment for their labour at fixed rates per piece.

The manufacturer, after receipt of the woven material, then sent it to the bleacher, the dyer or the finisher, if further treatment were needed, and then sold it at home or abroad. The home distribution was largely effected at first by travellers, who themselves took the goods on small caravans or pack-horses, even to distant parts of the country, where they were disposed of to shopkeepers. That was the mode during the greater part of the eighteenth century. Afterwards it was found more convenient, when the highways were improved, to carry only samples, the goods being despatched by waggons or by canal to their destinations. Until about 1820, the manufacturers whose productions were sent abroad conducted their trade directly, having their agents at the principal centres in such countries as were open to receive British cotton goods. Some States—France and Austria, for example—prohibited their importation. In other countries Manchester cottons were, to a large extent, sold at periodical fairs, as at Frankfort, in Germany. During the Napoleonic Wars this trade was attended with great risk—warlike and financial—and prolonged delay. The earlier minute books of the Manchester Chamber of Commerce, from the year 1794 onward for several years, are full of records of troubles arising from this source. Goods were sent, of course, by sailing vessels, and for a long time these could leave the ports only under the convoy of ships of war.

Such perils disappeared, however, after the re-establishment of peace in 1815, and from 1820 the characteristic trade of Manchester began to expand rapidly, and to undergo a remarkable change in its method. With the introduction and improvement of machinery, both for weaving and spinning, the business of distributing cotton goods gradually became separated from that of producing them. A distinct class of merchants arose—some devoted entirely to foreign, others to home trade. At first the over-sea trade was conducted by English, Scotch, or Irish

houses; but these were soon joined by Germans, chiefly from Hamburg or Frankfurt, some of whom had previously acted as agents for Manchester manufacturers.

Until 1825 the export of merchandise from England to the Turkish Dominions had been exclusively in the hands of the Levant or Turkey Company, under a Charter granted originaly by Queen Elizabeth in 1581. Its trade might be conducted only with the port of London. Adam Smith, in his "Wealth of Nations," describes this Company as "a strict and oppressive monopoly." Its position was certainly a very extraordinary one, for it bore the cost of supporting a British Ambassador at Constantinople and Consults at Aleppo, Smyrna and other places. The trading monopoly of the Company extended over the whole of the Sultan's possessions in Europe, Asia and Africa. After the surrender of its Charter in 1825, Greeks came to Manchester to open up the trade with Turkey. By their energy and commercial skill, as well as their knowledge of the Mediterranean markets, the export of cotton goods to the Ottoman territories was rapidly extended, and the foundation was laid for what has since become a very important branch of the foreign commerce of Manchester. Within the last thirty years this has been taken up by Armenian merchants, many of whom have settled in the city, and have proved hardly less enterprising and capable than their predecessors.

These successive settlements of foreigners, particularly that of German and Greek merchants, have been of great advantage to the trade and the mercantile organization of the city. Many of them acquired great wealth, and extended their business to India, China, South and Central America, the West Indies and Mexico. Nearly all of them—the Germans especially—soon became thoroughly Anglicised and took a full part in useful public movements. To the influence of the Germans is largely due the high musical reputation of Manchester, and other educational and philanthropic enterprises have received liberal and cordial support from them and from other citizens of

foreign origin or descent. The successors of the original immigrants are, of course, thoroughly English, and many of them inherit the energy and public spirit of their fathers, using their accumulated capital and ripe experience in helping to maintain the mercantile efficiency of the city. The fact that numerous British firms engaged in the foreign trade of the United Kingdom do not bear English names is often misleading, giving the impression, from which even our own Consuls abroad are not always free, that our trade is too much in the hands of foreigners who have but a feeble interest, or none at all, in promoting British commerce. It ought, therefore, to be understood that for the most part these firms, though founded by immigrants, belong as truly to the mercantile organization of the country as those having purely British patronymics.

The enormous export and import trade carried on by Manchester merchants with India, China, Japan and other East Asiatic countries is mainly conducted by English and Scotch firms; although others, originally German or Greek, possess a large share of it. Here, too, monopoly once reigned extensively. The East India Company had the exclusive right of trading with India until 1813, and with China until 1833. Even in 1813 the former privilege was only modified, and private merchants were not fully at liberty to carry on business with China or India until twenty years later. For a long time the whole of this great Asiatic trade was conducted, in so far as exports thereto were concerned, by the system of "adventure," or, to use the more modern term, consignment. Before the opening of the Suez Canal, in 1869, the shipments to and from the markets of South and East Asia were made round the Cape of Good Hope, and the quantity of merchandise afloat was equivalent to between four and six months' supplies. The shortening of the route has reduced it to about one-third of the quantity. At the same time the submarine telegraph cable, and the quickening of postal communication, have further facilitated commercial intercourse with the East.

Vast and far-reaching changes in the methods of conducting business have emerged from the progress achieved in these two directions. In the old "consignment" days the Eastern trade, both inward and outward, was very risky. Great fortunes were made, and many lost, by scarcity and glut of commodities in the various markets owing to the scantiness of intelligence as to supplies, and the numerous influences which stimulate or check demand, as well as by the slowness with which such intelligence became available. The trade was rightly called one of "adventure." Moreover, the long time required for the transport of merchandise made it impossible to quickly correct excess or deficiency of supply. The accumulated effect of these and other disadvantages of our commerce with distant markets thirty or forty years ago, was that the average margin between the prices of commodities at the port of shipment and at their ultimate destination was very high, and the cost to the consumer vastly greater than it is now. Risks of every kind have been enormously reduced, transport has been quickened, and knowledge of market changes enlarged and made more rapid. Hence the cost of distribution of British manufactures in these far-off regions, and of the merchandise received in exchange for them, is now probably but a fraction of that prevailing before 1870. In the up-country bazaars of India, British cotton goods are in these days regularly sold at prices surprisingly little above those current in Manchester.

Along with these improvements important alterations in the mercantile organization, and in the methods of conducting business, have been introduced. These are perceptible in every branch of trade, but in none are they so striking as in that of India, which is probably the largest single department, except the home trade. The annual value of the manufactures of all sorts—including machinery and metals, as well as textiles exported to the Dependency by Manchester houses—can hardly be less than £22,000,000. Much the largest proportion of this huge trade is now conducted by means of specific orders

from buyers in India; and in the department of cotton goods and yarns, these are received by telegraph. Every day, and all day long, messages pass to and fro with offers to sell or buy, at specified prices, the precise description of each class of goods, the dates of shipment and other particulars being distinctly stated. Thus the bargains are conducted with as much certainty as if they were made by mail or by personal interview. All this is accomplished by means of elaborate telegraph codes. The conduct of business with distant correspondents by telegraph is, of course, very costly. Before the recent reduction in the charges for code messages to India, which it is hoped will be carried still further, the expense of the telegraphic correspondence of Manchester houses with their branches and customers in India was equivalent to about $\frac{1}{4}$ per cent. on the amount of their transactions.

The employment of the telegraph for the negotiation and conclusion of business with oversea markets prevails in other branches of the foreign trade, although it is not usually so fully developed as it is in the case of India. Its effect in facilitating and lessening the cost of distribution is, however, perceptible in all directions. And, of course, the advantage of quicker transport and communication are more or less important in every department, as well as that of reduced liability to heavy losses from excessive accumulations of supply. Foreign business is, in short, much safer than it used to be, and periods of severe depression and financial disaster are fewer and less intense. Accompanying these changes is another which may, in part, be traced to them. The foreign business is more widely distributed. There are still a few large houses in the various branches of foreign trade whose transactions are conspicuously greater than those of others, but the whole number engaged in each branch has very largely increased. At the same time the kinds of commodities shipped by Manchester houses have multiplied appreciably, and the aggregate amount of their trade has thus been much enlarged and diversified.

It is possible to form a rough estimate of the value of the merchandise exported from Manchester and the surrounding district to foreign countries and British Colonies. In the year 1906 the exports of cotton manufactures of every sort from the United Kingdom were:—

Cotton piece goods	£75,394,237
„ yarns	11,835,967
„ sewing thread	4,026,886
„ lace	4,399,046
„ hosiery	510,883
„ smallwares, etc.	3,435,516
	£99,602,535

But the exports of made-up clothing were £5,376,082, and probably one-third of this sum represents cotton fabrics. Thus the entire value of the cotton manufactures sent to oversea markets must have reached £101,394,562, being nearly 33 per cent. of the total exports of British manufactured and partly manufactured commodities, the amount of which was £296,923,471, not including ships, coal and coke. A portion of this great foreign cotton goods business is dealt with in Glasgow, Nottingham and London; but it is probably no exaggeration to put down the aggregate value of the cotton goods of every description sent by Manchester houses to countries beyond the seas at fully £80,000,000 per annum. Other merchandise shipped by firms in the city and in the immediate neighbourhood embrace woollen, linen, jute and silk manufactures, steam and gas engines, boilers, textile, electrical and other machinery, chemicals, iron, steel and copper in numerous forms, indiarubber and many other classes of commodities. The value of these can hardly be stated at less than £20,000,000 per annum. Upon a rough estimate, therefore, the annual export trade in manufactures of the district of which Manchester is the commercial capital

may be computed at not far short of £100,000,000, or about one-third of the entire export trade of the whole country, excepting only that of coal and the ships built in our ports for foreign and colonial purchasers.

The conduct of this gigantic business implies, of course, a very large and thoroughly well-equipped mercantile organization. This has not reached its present high state of development in a day. It is the result of a century of growth, of long experience, and of constant effort through succeeding generations to improve it. It is a possession of incalculable value to the city and the district, as well as to the whole country—an unseen yet very real asset—whose worth can be realized only by a little steady thought about it. Manchester merchants are constantly kept well informed by telegraph and by mail, though chiefly by telegraph, of the wants of consumers far and near, of market movements and of changes of every sort affecting or likely to affect the conditions and currents of their trade. Their businesses are maintained and adapted to the constantly varying circumstances of the hour by specially trained staffs in each department, by ceaseless vigilance, and by the prompt transmission of intelligence to and from the world-wide markets with which their commerce is conducted. All this is done with little outward demonstration, and, so to speak, secretly. The silence of the machine is at once a consequence and a proof of its efficiency.

It is not pretended, of course, that there are not other great mercantile centres where highly-developed mercantile systems exist, both at home and abroad. It may be confidently affirmed, however, that nowhere in this feature of modern international trade more fully developed than it is in Manchester. This is, in a large degree, due to the fact that Manchester early became the seat of the export trade in cotton goods, which was the first to attain vast proportions in international commerce. It is also due in no small measure to the abundant immigration and settlement in Manchester of numerous foreign houses, attracted by this immense trade in the first half of last century.

These brought with them a thorough knowledge of the markets in the countries from which they came, as well as of their languages and of the methods and conditions of trade there. In 1830 the entire value of British productions of every kind shipped from the United Kingdom was £38,271,597, of which £19,428,000, or more than one-half, consisted of cotton goods and yarns, the rest, viz.:— £18,843,597, representing the exports of all other kinds of merchandise, agricultural, mineral and manufactured. It is not surprising that so vast a trade drew to the centre of the cotton manufacturing industry the capital, the skill and the experience of enterprising merchants from all quarters, besides stimulating the energy and capacity of those already on the spot.

But the mercantile organization thus early developed has not been content to occupy itself merely with cotton manufacturers, although these supply even now the leading material of Manchester export trade. A good many houses, no doubt, still confine their attention to them, but others embrace many commodities besides. This diversification of the trade has been a marked feature of the last twenty years, and there are probably few important products of British industry which are not subjects of it.

A visitor to the Manchester Royal Exchange at the hour of High 'Change—two o'clock—sees before him, at any rate on Tuesdays and Fridays, a dense mass of about 6,000 men assembled under one roof. To him it is nothing more than a confused crowd. Upon inquiry he finds, however, that there is more of order and purpose in it than he was at first aware of. The locations of representatives of the various branches of business in the great hall are not always strictly defined, and yet there is an approximate demarcation. The habitual frequenter of the Exchange knows where he can find the yarn agents, the Oldham or Bolton cotton spinners, the India or China merchants, the Blackburn or Burnley cotton manufacturers, the bleachers, the engineers, the iron and steel merchants, the leather and oil merchants, or the cotton brokers. In the main this

huge assembly is engaged in one department or another of the foreign trade, for the business of the home textile firms is conducted chiefly in their warehouses. There are, however, some thousands of spinners and manufacturers, of merchants who supply them with the materials or machinery used in their mills, and of merchants and manufacturers connected with the steel and engineering industries.

The purpose of this daily assemblage of business men is not confined to buying and selling. Its convenience in this respect is indeed obvious, since it enables buyers and sellers to meet in quick succession a much larger number of competitors for their business than they could without this means of meeting together, as well as to gauge rapidly the tone of the markets in each branch, and the general trend of affairs. It affords, too, opportunities of discussing matters of common interest in the various departments, of gathering information from all quarters, of concerting measures for mutual benefit, and of settling difficulties and explaining misunderstandings such as arise in all businesses.

The work of the foreign merchant and the heads of his departments done on 'Change is, of course, only a fraction of their employment. All the morning they have been engaged in studying correspondence, mail and telegraphic, in writing or dictating letters, in the examination of patterns and samples received from manufacturers or preparing them for despatch to their branch houses or correspondents, in receiving business visitors, in opening or concluding negotiations for purchases, in making, revising or altering financial arrangements—an important part of a merchant's work, requiring great watchfulness, thought and tact. All these, and other details, are specialized; that is to say, they are managed by men trained in, and devoting their attention to, the particular departments assigned to them. Each becomes an expert in his own line. He inherits the methods and aptitudes of those who have gone before him, and by daily familiarity with his

employment becomes quick to discern and to make improvements in his system, suggested by experience, or by changes in the currents and circumstances of his trade.

The export of textile manufactures to the British self-governing colonies has for many years been passing more and more into the hands of the home trade houses. Much of the Australian, Canadian, South African and nearly the whole of the British West Indian business is now done by these firms. Most of the goods in which they deal are, of course, produced in the United Kingdom. Woollens and worsteds from Yorkshire, Scotland and Wales; linens from Belfast, Dundee or Barnsley; silks from Macclesfield, Leek or elsewhere; boots and shoes from Leicester and Nottingham, as well as cotton manufactures, are distributed to almost every region of the Empire, except India and other British possessions in Asia and East and West Africa, by the home houses. But a fair proportion of the textiles they dispose of is imported, chiefly from the woollen, worsted and silk manufacturing districts of Germany, France and Switzerland. Thanks to our Free Trade system, anything and everything falling within their range of business, is imported by Manchester home trade houses. They are, indeed, under that system, able often to purchase goods from foreign manufacturers and supply them—strange as it may seem—to colonial or foreign customers at lower prices than these can obtain them from the producers directly. It is not an uncommon occurrence that the traveller for a Continental manufacturer in a British colony finds the particular kinds of goods which he is himself offering there, and made by his own firm, already supplied by a Manchester home trade house at prices as low, or even lower, than he is himself quoting for them. The explanation of this apparent anomaly is easily furnished, and it is very instructive. English merchants, having large outlets with which they are constantly in touch, know always where they can dispose of anything within the scope of their regular business at suitable prices. They are constantly open to receive offers of goods

from foreign manufacturers whenever they may want employment for their machinery, and such goods can be imported here without any other impediment than that of the cost of transport. Such surplus product, so to speak, can often be sent nowhere else with so much advantage because of the almost universal prevalence of protective tariffs. Now the purpose of these tariffs is to keep up prices within the protected area, and whenever the home production exceeds the home demand the excess is usually sent abroad in order to avoid, as far as possible, the depression of home prices which excessive supply invariably brings about. But where is the superfluity to be despatched? There is but one great free market in the world where anything good and cheap can be at any time sold and paid for promptly, unimpeded by the clog of protective Customs duties—that of the United Kingdom. Hence there are constantly arriving at our ports large quantities of merchandise—largely manufactures—supplied to us at prices lower than those at which they can be profitably made either by ourselves or by those who furnish them. For some years the total amount of foreign merchandise classed as wholly or mainly manufactured in the official records of imports has ranged from £135,000,000 to £155,000,000 per annum.

At first sight these figures may seem alarming. One may be disposed, perhaps, to entertain a suspicion at least that they signify loss of profitable employment for British labour and capital. Further examination of the subject, however, reveals the fact that this huge importation of manufactures into a country which is itself more fully devoted to the production of manufactures than any other is not only a great advantage to the whole population, but is also a source of profit to our own industries. A very large proportion of these imports—probably 60 or 70 per cent.—is used as materials or accessories of British manufactures. We import it because we cannot produce it so cheaply ourselves; and in so far as it becomes a constituent of our own industrial processes it is obviously beneficial to

import it. Another part of the foreign manufactures brought into our markets is exported either to foreign countries or to British Colonies in the same manner, and with the beneficial results already set forth. A further part—probably about 20 or 25 per cent.—of these imports passes directly into consumption at home; and, of course, its cheapness is a source of economy in the households into which it enters, leaving a margin of saving which may serve to increase the demand for home productions. Indeed, a careful study of this apparently alarming phenemenon that the people of these islands receive in the course of a year not far from £156,000,000 of foreign manufactures, reveals the fact that to be the "dumping ground" for the cheap surplus products of the world is a singular and substantial benefit to the population of the United Kingdom generally, as well as to its manufacturers.

Let any one who may be sceptical as to the accuracy of these statements ponder carefully the economic experience of this realm in the year 1906. It was a year of full and continuous employment for all our industries. There were no extensive or prolonged strikes, and the official labour statistics show that the proportion of workpeople out of employment was, throughout the year, very small. We were as busy as we could be in useful work, and the amount produced surpasses all previous experience. Yet in that year we imported a larger amount of foreign manufactures than had ever been known within a like period.

To return to Manchester. Its export and home trades in manufactures are but a part of the commerce of the city. As a centre for the distribution of imported food and raw materials of industry, it takes rank amongst the most important mercantile centres in the Kingdom. These come largely, if not mainly, through the great neighbouring port of Liverpool, but since the opening of the Ship Canal they have been received directly at the Manchester Docks, in substantial and steadily increasing quantities.

The enormous industrial population living within a radius of thirty or forty miles or more from the city, draws

its supplies of food for the most part from Manchester, except on the Western side. The people are generally well and continuously employed, and they earn high wages which they spend freely although they are by no means improvident. Hence they require food in abundance, and usually of good quality. The wholesale butter market which has its seat in the neighbourhood of the Corn Exchange, is acknowledged to be the largest in the kingdom, the amount of business transacted there being estimated at nearly £8,000,000 per annum, mainly of Irish, Colonial and foreign production. The chief source of this food product disposed of by the Manchester wholesale merchants is the Baltic countries, Denmark especially. But some of it comes from Canada, Australia, Holland, and even Russia, and important quantities are received from Ireland. The greater part of the supply from the sister island is now produced in creameries such as those which have been long successfully conducted in Denmark. But a considerable proportion of it still consists of the old brine-cured firkin butter made in the remoter districts of South-Western Ireland, for which some of the Lancashire factory population retains a long-established preference. In no other portion of the country, except among the colliery workers of South Wales, is there now a demand for this particular kind of butter.

The Manchester wholesale meat market is also of very great importance. It is supplied in so far as live cattle are concerned, mainly from Canada, the United States, Ireland and the River Plate, although important quantities are drawn from various parts of Great Britain. There is also a substantial importation of dead meat. Much of this class of food is landed at Liverpool or Birkenhead, but an appreciable share is discharged from steamers at the Manchester docks, where a well-equipped abattoir has been provided by the municipal authorities. An enormous amount of fish and game is distributed throughout the city and the neighbouring country for many miles round from the wholesale market on Shude Hill, and closely adjacent

is the wholesale fruit, vegetable and flower market. In the very early hours of the morning this part of the city is alive with business and traffic, when all the rest is silent. Here the local branch banks find a profitable field for their activity. The annual value of the financial transactions arising out of the trades carried on in the Shude Hill quarter, if it could be separately stated, would astonish even those who are usually well informed upon local commercial statistics. The distribution of groceries by Manchester wholesale merchants is also very large, although probably this branch of business is much more extensively carried on in Liverpool.

The relative magnitude of Manchester as a commercial centre may perhaps be most readily gauged by a comparison of the annual amount of the settlements at the Bankers' Clearing Houses of this and other cities in England. The clearings of the Manchester establishment, then, are $8\frac{1}{2}$ times those of Bristol; $4\frac{1}{2}$ times those of Birmingham; and about 48 per cent. larger than the clearings of Liverpool. No comparison can usefully be made with London from this point of view. The statistics of the London Clearing House are enormously greater than those of all the rest of the clearing houses of the country, because there a large part of the banking business of the whole nation is brought to the point of settlement, and it is the financial centre for Government business. London is also the "clearing house of the world." For these reasons the Metropolitan bankers' returns do not afford a useful guide as an indication of the relative mercantile and industrial importance of the capital. Nor, obviously, can they be so well used for the purpose of indicating fluctuations, from time to time, in the business activity of the country as those of the provincial banking institutions.

The Manchester Chamber of Commerce is one of the oldest institutions of its kind in the Kingdom. It was established in 1794, and reconstituted in 1820. Its minute books, which are still preserved from the beginning, show that it has done important service on behalf of British

industry and commerce for more than a century. From the date of its reconstitution, eighty-two years ago, it has consistently supported the cause of Free Trade, and when, in 1838, its Board of Directors appeared to be rather hopeless of success, Mr. Cobden, who had two years earlier become a member of the Board, took steps to stimulate its energies in this direction. At special and largely-attended general meetings of the Chamber, held in that year, he aroused the enthusiasm of the members, who adopted a lucid and vigorous appeal to Parliament on behalf of Free Trade. This decision gave a powerful impulse to the movement for the founding of the Anti-Corn Law League, of which several of the most munificent and energetic supporters were members of the Chamber.

In 1820 a memorial to Parliament, prepared by Mr. Thomas Tooke, the well-known author of the "History of Prices," was signed by a number of London merchants in favour of Free Trade, there being at that time no Chamber of Commerce in the Metropolis. This document attracted great attention, in and out of Parliament, and it is still one of the cleverest and most powerful vindications of that policy ever written. It followed very closely the exposition of this subject published by Adam Smith in the "Wealth of Nations." This memorial was quickly followed in the same year by similar appeals to the Legislature from the Edinburgh and Manchester Chambers. From that time onward, until 1838, the latter body made frequent and almost annual appeals either to Parliament or to the Government against the policy of Protection. These bore no fruit, however, until after the seven years' struggle of the Anti-Corn Law League which was, in part at least, the outcome of the memorable meetings of the Chamber just referred to. To the course then taken it has ever since consistently held on. Waves of temporary reaction have occasionally swept over the country during the last sixty-nine years, and slight ripples have appeared amongst its members, but the Chamber has not swerved from the position taken up when Mr. Cobden's memorial to

the House of Commons of 1838, in favour of Free Trade, was adopted.

The services of the Chamber to the commercial and industrial community of the city and the district are of various kinds. Its Tribunal of Arbitration, founded more than thirty years ago, is a useful means of settling disputes such as are continually arising in business transactions, and yet are not sufficiently important to be carried to the Courts of Law. So highly is this institution valued that it is constantly resorted to by disputants in almost every department of trade. The Testing House of the Chamber, established a few years ago, has also attained a high position. Its work is very much of the same kind as that of the Continental "Conditioning Houses," although the scope of its operations is somewhat wider. The Testing House is situated at the Royal Exchange. It has two departments, one devoted to the examination of textile raw, manufactured and partly manufactured materials, and the other to that of substances requiring chemical tests, including food products. This branch of the Chamber's work, notwithstanding its comparatively recent creation, has already become very important, and it is constantly resorted to, not only by merchants and manufacturers in Manchester and in the surrounding industrial district, but also by applicants for tests in much more distant places.

The ordinary deliberative and administrative work of the Chamber has greatly expanded within the last fifteen or twenty years. This enlargement is due, not only to the marked increase in the commerce of the city, but also to the extension and growing diversification of its industries. For the most part the questions brought before the Chamber are considered in the first instance by committees representing separate departments. There are fifteen of such committees dealing severally with the following subjects:—Correspondence and finance, India and China, general purposes, general foreign (with departmental sub-committees), trade and merchandise marks, shipping,

education, chemical, yarn, African, produce, engineering and metals, home trade, sugar trade, and testing house. The minutes of all committees are presented at the monthly meeting of the Board of Directors, and no action is taken, involving a new departure on any important question, without the approval of the Board. Thus the policy and course of the Chamber are determined in the first place by full investigation on the part of persons who are expert authorities on the particular matter, and secondly, by the revision of their conclusions at the meetings of the Board. In order, however, that the conclusions of each Committee may be adequately represented, the Chairman of every Committee is a member of the Board.

In common with other large commercial centres Manchester has made great changes in the residential quarters of its citizens within the past sixty or seventy years. In the first quarter of last century business men lived very near and sometimes adjacent to their warehouses. Very few indeed had their homes outside the boundaries of the town. Even now traces of these old urban residences of Manchester merchants may be found in buildings at present used as offices, warehouses or shops, but these are fast disappearing, their sites having been occupied by handsome modern business premises. When merchants and manufacturers abandoned their town dwellings, the districts to which they migrated were still within easy distance of their businesses. Some went to Lower and Higher Broughton, Cheetham Hill, Pendleton, Oxford Street, Upper Brook Street, Victoria Park, Rusholme and Old Trafford; later on Whalley Range, Stretford and Fallowfield were embraced within the residential area. With the advent of railways business men ventured further afield, and Alderley, Wilmslow, Sale, Brooklands and Bowdon were added. At first the daily railway journey was an imaginary difficulty, and in order to overcome it the London and North Western Railway Company gave a free ticket extending over a number of years to the occupant of a house of a certain annual value in such

localities as Wilmslow and Alderley. After a time inducements of this kind became unnecessary, and a large number of merchants, manufacturers and professional men, and even managers of departments and clerks travel daily to and from home by rail to these and other suburban districts for many miles around. Some even journey daily to seaside places, such as Southport or St. Annes-on-Sea, or to the hill country of Buxton and Disley. In like manner the wage-earning population has for years past been moving outward, in recent years with enhanced rapidity, the sites of their old residences within the city boundaries being required for business purposes. This movement has been facilitated by the spread of tramcar facilities and especially by the introduction of the speedy electric cars. If, then, a fair estimate were made of the population of Manchester and Salford, including in it those who are engaged in the commercial and industrial activities of the city and the borough, which is really a part of it, it would be needful to go far beyond their actual boundaries. Probably, indeed, if this extended view were taken as the basis of calculation, it would appear that the population of the commercial and industrial community of Manchester is not less than 1,100,000 or 1,200,000, and it is still growing. Undoubtedly much of the increase within the last fifteen years is to be traced directly and indirectly to the influence of the Manchester Ship Canal—directly in the number of hands and heads required for the mere service of the port, and indirectly in the founding of new industrial establishments, which owe their existence entirely to the creation of the port of Manchester and the provision for bringing large ocean-going steamers up to the doors of this busy inland community.

CHAPTER XII.

THE MEDICAL CHARITIES OF MANCHESTER AND SALFORD.

By the Late FRANK RENAUD, M.D. *(with corrections).*

ACCEPTING as an indisputable fact that Manchester and Salford are as much one community as London and Surrey, a river being the only dividing line, it will be convenient to group the Medical Charities existing in both as one community. Of the leading public Institutions devoted to the care and cure of the sick and injured, the Royal Infirmary, with its affiliated branches, takes precedence, whilst the Royal Hospital in Salford, and the Ancoats Hospital, both of a more modern date, and derived from modest beginnings, now rank as General Infirmaries, fully equipped and competent to pursue an equally important charitable work and trust.

Subsidiary to these, but having a more defined programme, the General Hospital for Sick Children at Pendlebury, St. Mary's Hospitals for Diseases of Women and Children, and the Northern (late Clinical) Hospital may be embraced in the same category; whereas the Monsall Hospital, formerly an annex to the Infirmary and now under the care and supervision of the municipal authorities, takes cognizance of infectious diseases generally.

Large and liberal provision is also made for the more indigent sick poor at the Crumpsall Hospital, the Chorlton Union Hospital at Withington, and Salford Union Infirmary, supported out of the rates. In the County Lunatic Asylum at Prestwich, upwards of 2,000 persons of both sexes are ministered to, suffering under various forms of mental disease.

Provision is made for yet more defined and specialized complaints in the Royal Eye Hospital, the Christie Cancer Hospital, the Ear Hospital, the Hospital for Consumption and Throat Diseases, for Skin Diseases, the Northern Hospital for Incurables, the Lock Hospital, and in the Victoria Dental Hospital; whilst an institution for the care and treatment of epileptics has been established at Warford. A Jewish Hospital (the first of its kind in the country), has recently been opened.

Excepting the Eye Hospital, the major part of public charitable institutions embraced in this last category, established for the investigation and relief of specialized diseases, are of a comparatively recent date, though as their importance is being more fully appreciated, they may anticipate a correspondingly liberal pecuniary support from the community such as will suffice for an enlargement of their borders.

The Royal Infirmary.

This, the mother institution, dates from the year 1752, and owes its inception to the enlightened and benevolent instrumentality of a few citizens, aided by the counsel of Mr. Charles White, a surgeon of no mean reputation. At this period only three other provincial hospitals existed out of London. Provision was made for a suitable building calculated to hold 100 patients, on the existing site, originally rented from, but subsequently granted freely by the then lord of the manor to the governors for the use of like charitable purposes. After undergoing considerable extensions an Act of Parliament was secured based on those conditions. At present the Infirmary contains approximately 300 beds, and is vested in a large and miscellaneous body of trustees. In 1766, when only three institutions for the rational treatment of lunatics existed in Bethlehem, St. Lukes, and Newcastle-on-Tyne, the governors added a wing for this purpose, placing it under the supervision of the Infirmary physicians, where it remained

till 1847 when, partly through want of room, but mainly because the building arrangements were out of date, this part of the Institution was removed to Cheadle, some seven miles distant, where it now flourishes and accommodates 358 patients, most of whom are self-supporting, whilst others are received on almost nominal payments.

In 1796, when typhus and typhoid fevers prevailed, and the need of a suitable building for contagious diseases generally existed, a "House of Recovery" was built on adjoining land by the same authority, calculated for eighty patients, and officered by Infirmary physicians. Here it remained till 1870, when it was removed to the Monsall suburb, and considerably enlarged. For some succeeding years an annual subsidy was granted by the city authorities in compensation for patients admitted and coming more properly within their jurisdiction, and afterwards the whole establishment was purchased by them from the Infirmary, so that now the entire control and management is vested in their Health Officer and his coadjutors. Provision is made for 400 patients, in detached blocks of buildings, for all infectious diseases, smallpox alone excepted, for which another more distant locality has been chosen, due to its more virulent infectiousness.

Coincidently with the establishment of the hospital at Monsall, the desirability of founding a convalescent home presented itself, a deficiency which, through the generosity of the late Mr. Robert Barnes, the Infirmary governors were able to supply by the erection of another building about five miles distant from the Infirmary, near the village of Cheadle, to accommodate 136 patients recovering from illness and injury; and a further provision exists for the reception of a limited number of convalescents at Southport and Buxton. Collectively, the Infirmary with its subsidiary branches has a capacity for treating about 1,000 patients annually, exclusive of accidents averaging 13,000, whilst maintaining its financial integrity.

The New Infirmary.

A new Infirmary to accommodate 600 patients is in course of erection on a site of 12 acres in Oxford Road between Nelson Street and York Place. It is built upon the pavilion principle, the various wards and other blocks being connected by covered corridors. Besides the wards the buildings include an out-patient department containing a waiting hall capable of seating 400 persons, with the necessary consulting and examining rooms, a block for the treatment of accident and casualty cases, a teaching block, a nurses' home, and all necessary administrative buildings. The total cost will be nearly £500,000.

Ancoats Hospital.

With a rapid increase of population due to an impetus given to cotton manufacture and other industries it became expedient, alike in the interests of the working classes concentrated in the crowded district of Ancoats and for relieving the pressure of increasing obligations cast upon the Infirmary, that a more local provision should be made for an operative population engaged in these industries.

A Dispensary for out and home patients was therefore established in their midst, named the "Ardwick and Ancoats Dispensary," in 1828, in the furtherance of which the late Sir James Kay Shuttleworth (at that time a physician practising his profession in Manchester) took a leading direction, and likewise distinguished himself in promoting other sanitary and social undertakings calculated to promote the welfare of the community. After passing through a successful preliminary probation, the foundation of a general hospital was laid in 1871 at Mill Street, to hold and maintain 80 beds, which number was increased to 114, representing 90 for adults and 24 cots for children, in 1888, when the late Duke of Clarence was graciously pleased to open a separate wing, the gift of Mr. James Jardine, to be thenceforward known as the Albert Victor Pavilion.

Salford Royal Hospital.

A narrative of the rise and progress of this Hospital cannot be written more concisely than in the following preface appended to the annual report issued for the year 1901:—

In the year 1827 this Hospital had its origin in temporary premises in Chapel Street, Salford. In 1830 the corner stone of a portion of the present building was laid on a plot of land that had been acquired from the Duchy of Lancaster. The Institution received the patronage of King William IV., and His Majesty contributed 25 guineas annually towards the maintenance of the Hospital. The Royal patronage was continued during the reign of Queen Victoria, and King Edward the VII. has graciously consented to renew the privilege so long enjoyed. For the first 18 years of the Hospital's existence medical relief was afforded only to Out and Home patients, but in 1845 ten beds were provided in the building for the reception of In-patients. In 1866 two wings were added to the original building, raising the number of beds to 40; in 1871 ten more were added, and in 1882 the number was increased to 62. A large legacy left to the Institution in 1882 by the late John Pendlebury, Esq., enabled the Governors to further extend the hospital accommodation to 127 beds. In 1875, previous to this last enlargement, the Pendleton Dispensary was built, as a branch of the Hospital, by means of a public subscription amongst the inhabitants of the District.

St. Mary's Hospitals.

The St. Mary's Hospital and the Southern Hospital were united under one management in the year under the distinctive name of St. Mary's Hospitals. The older Charity, like the Infirmary, owes its inception to Mr. Charles White, who, together with his son Dr. White and Messrs. Edward and Richard Hall,* were elected "Men Midwives Extra-

* In his obituary notice Mr. Richard Hall is stated to have served the Infirmary 19 years, and during his professional career to have brought 3,800 children into the world.

ordinary" in 1790, their functions being to deliver poor women of children at their own homes, and, when practicable, within the modest provisions of the Hospital proper. After undergoing sundry changes of locality and assuming the title of St. Mary's Hospital, the foundation stone of the building in Quay Street was laid in 1855, mainly through the enlightened liberality of the late Dr. Radford, a physician of no mean repute, whose extended career was devoted to this special department of medical science, and whose memory is yet further preserved by the gift of a valuable library and museum to the Institution. St. Mary's lays claim to be the oldest Hospital in Manchester for sick children. The present building in Whitworth Street and Oxford Street was erected from the designs of the late Mr. Alfred Waterhouse, and opened in 19——. The Southern Hospital was founded in 1866, and was located for the present in Clifford Street, Oxford Road. A new building adjoining the new Royal Infirmary is approaching completion.

The Children's Hospital at Pendlebury.

This Hospital, devoted exclusively to the care and treatment of sick children, is situated about four miles away from the centre of the city, on six acres of land in salubrious surroundings, at Pendlebury, and owes its establishment mainly to the initiative of the late Dr. Borchardt, who, together with Dr. S. Merci, another eminent specialist from Hungary, found a refuge and welcome in England from Continental political entanglements towards the middle of last century. Dr. Borchardt's public services were at first confined to a less pretentious establishment, inaugurated in 1829, and known as "The Gartside Street Dispensary," devoted to like purposes, removed from Mount Street, and re-built in 1868, and again recently re-built, where out-patients are still seen and prescribed for, the more serious cases of illness being drafted from thence to the Hospital at Pendlebury.

Dr. Borchardt's abilities and energy having been quickly recognised, he was fortunate enough to enlist the sympathy and co-operation of a number of wealthy laymen, through whose united efforts the present Hospital was built and opened in 1873, and is represented at the present time by six widely-separated bays or pavilions, each calculated to hold 26 beds.

A seaside Convalescent Home, at St. Annes-on-Sea, on a modest scale, for the reception of such patients as are most in need of such an adjunct, completes the programme of this Hospital's obligations.

The Royal Eye Hospital.

This Hospital, occupying a commanding position in Oxford Street, was opened in 1866, and supplements without supplanting a more central and earlier Institution located in St. John's Street since 1867, to which out-patients yet resort for advice and treatment.

Like other subsidiary charitable institutions, the existing one had a modest beginning, and after pursuing a migratory course found a temporary home in South Parade towards the year 1840, where for the first time it seemingly became practicable to provide a few beds for in-patients Street has now proved incapable of providing for the needs of all the out-patients who resort to it, or to house and maintain within the wards the large number of patients who apply for admission. A further extension is therefore being provided on a contiguous site.

Hospital for Skin Diseases.

From amongst the number of smaller Hospitals in Manchester, that for skin diseases, located in a new and finely-equipped Hospital in Quay Street, calls for a special recognition, inasmuch as the treatment of lupus and other allied and intractable cutaneous affections has been rigorously and, in many instances, successfully dealt with by the Finsen Light and Roentgen Ray methods of treatment, conducted on a commendable scale of liberality.

CHAPTER XIII.

MANCHESTER WATER SUPPLIES.

The city of Manchester and surrounding district is supplied with water by gravitation from the Longdendale Valley, situated in Cheshire and Derbyshire, 18 miles east of the city, and from Lake Thirlmere in Cumberland, 96 miles distant.

Prior to the Corporation undertaking the supply the inhabitants were almost entirely dependent on the limited resources of the Manchester and Salford Waterworks Company, who obtained Parliamentary powers to supply the town in 1809. They continued to afford a supply for upwards of 40 years, but failed altogether to keep pace with the growing demands of the district, and the Corporation, in 1846, turned their attention to the subject with the object of making better provision for this important necessary of life, as well as for the wants of trade.

The Company's supply was obtained from the River Medlock at Holt Town, certain old works constructed there by Sir Oswald Mosley (then lord of the manor of Manchester) having been purchased by them; from reservoirs they constructed at Gorton, which were supplied from streams in that district; from the Manchester and Stockport Canal, and from a well sunk in the new red sandstone.

The Company's works were acquired by the Corporation in 1851. Those at Holt Town, as also the well at Gorton, were abandoned, the reservoirs at Gorton being retained and utilised in the general system of supply from Longdendale.

Longdendale.

The Longdendale works were designed by Mr. Bateman, C.E., Parliamentary powers for the same being obtained by

the Corporation under various Acts of Parliament extending from 1847 to 1882; the water from this source being first delivered into the town in 1851.

With a rainfall approaching 50 inches per annum they are estimated to supply at least 22 million gallons a day, in addition to providing the compensation water required to be sent down the River Etherow at Tintwistle, amounting to an average of 14 million gallons a day, and comprise the following reservoirs:—

Collecting and Storage Reservoirs.

Reservoir.	Area.	Capacity.	Depth.	Height of Top Water Level above Sea Level.
	Acres.	Gallons.	Feet.	Feet. In.
Woodhead	135	1,181,000,000	71	782 0
Torside	160	1,474,000,000	84	651 3
Rhodes Wood	54	500,000,000	68	574 6
Vale House	63	343,000,000	40	503 0
Bottoms	50	407,000,000	48	486 0
Arnfield	39	209,000,000	52	540 3
Hollingworth	13	73,000,000	52	554 9

Service Reservoirs, supplied from the Storage Reservoirs.

Reservoir.	Area.	Capacity.	Depth.	Height of Top Water Level above Sea Level.
	Acres.	Gallons.	Feet.	Feet. In.
Godley	15	61,000,000	21	478 0
Denton, No. 1	7	30,000,000	20	321 6
Denton, No. 2	6	23,000,000	20	321 6
Audenshaw, No. 1	80	528,000,000	27½	340 0
Audenshaw, No. 2	69	371,000,000	22½	323 0
Audenshaw, No. 3	102	542,000,000	22½	323 0
Gorton, Upper	34	123,000,000	26	259 0
Gorton, Lower	23	100,000,000	29	244 0
Prestwich, No. 1	4½	20,000,000	22	352 3
Total	854½	5,985,000,000		

The Manchester Royal Exchange is 121·7 feet above Ordnance Datum.

The watershed consists of an elevated portion of the Pennine Range, and covers about 19,300 statute acres, varying in level from about 500 feet to over 1900 feet above the sea, the geological formation being the lower strata of the coal measures below the coal, "Millstone Grit," forming the cap of the hills and the precipitous sides of a large portion of the district.

The cost to the 31st March, 1906, has been:—

Manchester and Salford Waterworks	£533,561
Longdendale Works	2,845,451
	£3,379,012

Thirlmere.

The supply from Lake Thirlmere has been obtained under powers comprised in an Act of Parliament passed in 1879.

These works which were also designed by Mr. Bateman, C.E., were carried out by Mr. G. H. Hill, C.E., and were opened for the supply to the city in October, 1894.

The scheme in the first instance met with strong opposition from an æsthetic point of view, and was the subject of an exhaustive enquiry by a Select Committee of the House of Commons in 1878.

The lake is situated in the county of Cumberland, at the foot of the Helvellyn Range of mountains adjoining the highway from Grasmere to Keswick. Its natural elevation is 533 feet above sea level, and its area, before being raised, was about 330 statute acres. It was about three miles long, over a quarter of a mile across at its widest part and about 112 feet deep.

It lies approximately north and south, and is flanked at the north end by the hills known as Raven Crag and Great How, both of which are striking objects in the landscape. Between these there is in the valley a small hill

of exceedingly hard and close rock, the summit of which is about the new full top water level of the lake, and this divides the valley into two. The natural outlet of the lake into St. John's Beck was by the eastern side of this hill.

The watershed consists principally of silurian rock, is exceedingly steep, and covers 7,400 acres in extent, but for the purposes of water supply this will be hereafter increased by impounding additional streams, ultimately enlarging the drainage area to 11,000 acres.

The rainfall average is nearly 90 inches per annum.

The water for the purposes of supply is impounded above the natural level of the lake, the area of which is increased to 690 acres for the supply of 20 million gallons a day, and will hereafter be further increased to 793 acres when raised to the full extent of 50 feet.

The embankment, at the north end of the lake, is 857 feet long, 18 feet 6 inches wide on the top and 58 feet above the level of the bed of the former outlet of the lake into St. John's Beck.

In the solid rock to the west of the embankment, near the foot of Raven Crag, two overflows have been constructed, one now being in use at a level of 35 feet above the natural lake and the other at the raised or top water level. These overflows communicate with a waste water course, by which the water can be conveyed into St. John's Beck.

Other arrangements, regulated by valves, are also provided for discharging water into the river and supplying the compensation water (between 4 and 5 million gallon a day), which quantity can at all times be tested, if desired, by passing the same through a gauge basin specially constructed for the purpose.

The lake is capable of impounding the following quantities of water, viz.:—

When raised 20 feet 2534 million gallons.
„ 35 „ 5129 „
„ 50 „ 8135 „

At its full height the water that can be stored will be sufficient to give a supply of 50 million gallons a day for about 160 days continuous drought, after providing the compensation water.

The water is delivered from the lake at the south end by means of two tunnels and short lengths of pipes at different levels into a large straining well 65 feet deep, and is then passed into the aqueduct through copper wire gauze strainers.

The aqueduct to Manchester is nearly 96 miles in length, and consists of:—

Tunnels	$14\frac{1}{8}$ miles.
Cut and Cover	$36\frac{3}{4}$ „
Pipes	45 „

The "tunnels" and "cut and cover" are about 7 feet diameter, and follow the contour of the ground at an inclination of 20 inches to the mile, and are constructed to convey the full supply of 50 million gallons a day.

The principal tunnels are those under "Dunmail Raise," "Nab Scar," "Skelgill Wood" and "Moor How," in the Lake District, comprising a total length of over six miles.

In the case of the syphon pipes only 2 lines have been laid as yet to convey 20 million gallons a day. The laying of a third pipe, intended to bring an additional 10 million gallons a day is now under consideration.

All the works are laid out for five lines of pipes, so that the supply can be increased by laying down an additional pipe when required. The most important lengths are those across the rivers Mint, Lune, Ribble and Irwell.

The aqueduct, as at present completed, terminates in the

reservoirs at Prestwich, which have a holding capacity of 41 million gallons.

The lake and watershed, the way-leave for the aqueduct and the works, as carried out, including lines of pipes, have cost £3,423,378.

When all the pipes have been laid, and the lake raised to the full extent, it is estimated that the total cost will be about five millions.

Distribution of Supply.

All the water from Longdendale required for distribution is, in the first instance, delivered into the Godley Reservoir.

The connection between this reservoir and the Longdendale Valley is by means of a water course, which passes through a tunnel under Mottram Hill.

A main, 40 ins. diameter, is laid from this Reservoir to supply the Denton, Audenshaw and Gorton Reservoirs, the supply from Thirlmere being dealt with either from the Aqueduct direct or from the Prestwich Reservoirs.

The area of supply, which comprises the City of Manchester and 19 adjoining districts, covers 90 square miles, and is divided into four zones, each zone having a different head of pressure, varying from 244 to 478 feet above sea level.

Supplies of water in bulk are given to—

The Salford Corporation, for the township of Salford.
The North Cheshire Water Company.
The Stockport Corporation.
The Hyde Corporation.
The Tyldesley-with-Shakerley Urban District Council.

The Mottram in Longdendale and Hollingworth Urban District Councils, and to several local authorities on the line of aqueduct from Thirlmere.

In all cases before entering the mains for consumption the water is passed from the reservoir through copper wire gauze strainers.

Trunk mains are laid from the service reservoirs, from which branch mains of various sizes are taken for distributing the water.

The consumption on the average is about 37,000,000 gallons a day and the population supplied is about 1,200,000 persons, being at the rate of about 17 gallons per head per day for domestic and 14 gallons for trading and public purposes.

The water both from Longdendale and Thirlmere is soft and of excellent quality.

The following analysis gives a comparison of the two :—

	Longdendale.		Thirlmere.	
	Grains per gallon.	Parts. per million.	Grains per gallon.	Parts per million.
Total Solids	4·70	67·14	1·45	20·71
Chlorine	0·70	10·00	0·40	5·71
Free Ammonia	0·0021	0·03	0·00	0·00
Albuminoid Ammonia	0·0056	0·08	0·0049	0·07
Nitrogen as Nitrates and Nitrites	0·07	0·24	0·0247	0·35
Total Hardness	2·0	—	0·5	—
Permanent Hardness	2·0	—	0·5	—

CHAPTER XIV.

THE PORT OF MANCHESTER.

The "Harbour and Port of Manchester" was constituted by an Act of Parliament passed in the year 1885, and includes the Ship Canal (from the entrance at Eastham on the river Mersey to Hunt's Bank, in the heart of the city of Manchester, a distance of upwards of 50 miles from the sea) and the rivers Mersey and Irwell above Warrington, and the Manchester Ship Canal Company is constituted the Harbour Authority of the port.

For Customs purposes Manchester was by Treasury Warrant dated December 18th, 1897, declared to be a port on and after January 1st, 1894, to include the Ship Canal, the rivers Mersey and Irwell above Ince Ferry and Dungeon Point—where it touches the port of Liverpool—and the river Weaver up to Frodsham Bridge. In the same warrant the limits of the port of Liverpool were amended and Runcorn ceased to be a port, being merged into the port of Manchester.

For port sanitary purposes the Manchester Port Sanitary Authority was constituted by an Order of the Local Government Board dated September 4th, 1896, and its jurisdiction extends to the whole of the port of Manchester.

The arms of the Company are representative of Manchester, Salford and Warrington, and its motto is "Navigation and Commerce."

The original contract for the construction of the Canal and the various auxiliary works was let to Mr. Thomas Andrew Walker on the 8th June, 1887, and the first sod

was cut by the then chairman of the company, Lord Egerton of Tatton, without any ceremony, near Eastham, on the 11th November, 1887.

The Canal was opened for traffic to Ellesmere Port on the 16th July, 1891, and to Weston Marsh Lock for the accommodation of the river Weaver traffic on the 28th September, 1891. Water was admitted to the Runcorn section on the 8th July, 1893, and on the 17th November, 1893, the tidal portion of the Canal from Eastham to Latchford Locks, a distance of 21 miles, was filled.

At 10-30 p.m. on the 25th November, 1893, the Canal was filled from end to end, and on the 7th December the first vessel to reach Manchester by the new waterway (the "Snowdrop") conveyed the Directors and Officers of the Company from the Liverpool landing stage to the Manchester Docks. On this occasion the whole of the lock gates and swing bridges were worked by hydraulic power for the first time, without a hitch of any kind.

The Canal was opened for traffic to Manchester on the 1st January, 1894, amid great rejoicing, and on the 21st May, 1894, was formally inaugurated by Her late Majesty Queen Victoria.

The Canal is 35½ miles long, 120 ft. wide at the bottom and 26 ft. deep. In the tidal portion the depth varies from 26 to 33 ft., according to the state of the tide. The deepening of the Ship Canal to 28 ft. under the powers of the Company's Act of 1904 is now in progress. In the estuary length (Eastham to Latchford Locks) this has been accomplished by permanently raising the water level by two feet, and in the length from Latchford to Manchester the work has been completed by dredging as far as the Partington Coaling Basin, and is being pushed forward vigorously.

There are five groups of locks by means of which the level of the water in the Canal at Manchester is raised to a height of 70 ft. above the mean level of the sea. The largest lock at the entrance to the Canal is 600 ft. long and 80 ft. wide, and there are also an intermediate lock 350 ft. by 50 ft., and a small lock 150 ft. by 30 ft. In the other groups there are only two locks, viz.: 600 ft. by 65 ft. and 350 ft. by 45 ft.; but each lock can be reduced in length by means of intermediate gates.

The time occupied in passing through the locks varies, but the time generally required to pass a vessel through the largest lock is eight to ten minutes.

In addition to the locks above mentioned there are a number of side locks for the accommodation of local traffic, connecting the Ship Canal with the River Mersey and with inland canals.

At each group of locks there is a series of flood sluices, each sluice being 30 feet wide, with a lift of 13 feet. There are also two additional sets of sluices at Weaver Mouth and Old Randles Creek for passing tidal water out of the Canal.

The Canal is crossed by seven swing road bridges, and by seven high-level bridges, five of which carry railways.

The Bridgewater Canal is also carried over the Ship Canal at Barton by means of a steel swing aqueduct weighing ing 1,450 tons. This aqueduct has taken the place of the celebrated structure built by Brindley for the first Duke of Bridgewater, to carry the Bridgewater Canal over the river Irwell, which stood for 130 years. The locks, swing bridges, etc., are worked by hydraulic power.

There are various wharves, quays and lay-byes on both sides of the Canal between Eastham and Manchester, docks at Weston Point and Runcorn, and the terminal docks are at Manchester.

The Manchester Dock Estate covers an area of 406½ acres, including a water space of 120 acres, and quays 6½ miles in length and 286½ acres in extent. The height of the quay walls is about 8 feet above ordinary water level.

The dimensions of the Manchester Docks are :—

No. 1	...	700 by 120 feet.	No. 6	...	850 by 225 feet.
,, 2	...	600 by 150 ,,	,, 7	...	1160 by 225 ,,
,, 3	...	600 by 150 ,,	,, 8	...	1340 by 250 ,,
,, 4	...	560 by 150 ,,	,, 9	...	2700 by 250 ,,
,, 5	...	980 by 750 ,,			
(Partially Constructed)					

The equipment includes 53 hydraulic, 60 steam, and 91 electric cranes, with a radius of from 16 to 40 feet, capable of lifting from one to 10 tons to a height from rail level of from 13 to 59 feet; a 30-ton steam crane; 43 locomotives; six floating pontoons of a dead-weight capacity of 800 tons each, and all modern appliances for giving vessels quick despatch.

There is also a Pontoon Sheers capable of dealing with weights up to 250 tons, with a lift of 21 feet.

There is a range of thirteen single floor, one two-floor, six three-floor, five four-floor, and twelve five-floor transit sheds, fitted with the most modern appliances, including a cold transit shed, for the sorting of frozen meat and other produce; also thirteen warehouses, seven storeys each, fitted with 27 friction hoists worked by gas engine; and in Trafford Park the Ship Canal Company have four single-floor warehouses, each 200 feet by 100 feet. The docks, quays, sheds, and warehouses, are lighted by electricity, and there are 34 hydraulic and 16 electric capstans on the quays. Bonded accommodation is also provided.

The Grain Elevator has a storage Capacity for 40,000 tons (or 1,500,000 bushels), in 268 separate bins. The following operations can be performed simultaneously :—

(*a*) Discharging from vessels in the Docks at the rate of 350 tons per hour.

(*b*) Weighing in the tower at the water's edge.

(*c*) Conveying to the house and distributing into any of the 268 bins.

(*d*) Moving grain about within the house for changing bins or for delivery, and weighing in bulk at the rate of 500 tons per hour.

(*e*) Sacking grain, weighing, and loading sacks into 40 railway wagons and 10 carts simultaneously.

(*f*) Conveying from the Elevator into barges or coasters at the rate of 150 tons per hour if in bulk, or 250 sacks per hour if bagged.

There is a total tankage capacity for the storage of oil in bulk at, or adjacent to the Manchester Docks, of 22,000,000 gallons.

The Manchester Corporation Lairages and Foreign Animals Wharf occupy a site twelve acres in extent, with wharfage on the Ship Canal of 800 feet, and a frontage of 850 feet to Trafford Wharf Road. The Ship Canal at this point is 300 feet wide. This site is particularly well suited for the purpose, being within two miles of the Manchester City Abbatoirs and Carcase Market, and having the advantage of direct and convenient approach. These premises enable foreign cattle to be landed and dealt with at Manchester, the centre of the area of consumption. Rails connecting with the Ship Canal Railways run into the premises, providing facilities for distribution of meat all over the country.

Near Mode Wheel Locks are the Manchester Dry Docks Company's Works, fitted for ship building or repairing, a graving dock 475 feet long (now being lengthened to 535 feet) by 65 feet wide, with 22 feet of water on the blocks, which are four feet high, another dry dock is in

course of construction and will be 425 feet by 65 feet, and a floating pontoon 260 feet long by 63 feet wide, with 16 feet of water on the blocks, which are 3 feet 9 inches high, capable of lifting vessels weighing up to 2,000 tons.

The Manchester Dock Railways are 61 miles in extent, and completely intersect the Dock Estate. The total length of railways already completed at the Docks and at many points alongside the Ship Canal is upwards of 128½ miles. The following railways connect with the Docks: London and North Western, Lancashire and Yorkshire, Great Northern, Midland, Great Central, and Cheshire Lines.

The Ship Canal Company's Railways alongside the Ship Canal between Manchester and Eastham are connected with the railways of other companies as follows: With the Cheshire Lines at Irlam and Glazebrook; with the London and North Western at Latchford and Runcorn Docks; with the joint line of the London and North Western and Great Western Companies at Walton Old Junction (near Warrington) and Ellesmere Port.

Traffic can be conveyed in railway wagons between the various loading and discharging berths at the Docks and other places on the Ship Canal, and over the above lines to every railway station in Great Britain.

The Ship Canal is also in direct communication with all the inland navigations of the country.

The Company maintains its own police and fire brigade, fully equipped with appliances for dealing with fires and in addition the "Gamewell fire alarm" system has been established at the docks, by means of which the Manchester and Salford Fire Brigades can be promptly summoned.

The total expenditure on capital account at June 30, 1906, was as follows:—

Photo by R. Banks. *Manchester.*

EASTHAM LOCKS : THE ENTRANCE TO THE MANCHESTER SHIP CANAL.

Photo by R. Banks. *Manchester.*

MANCHESTER SHIP CANAL : RUNCORN BRIDGE.

The Grain Elevator, Manchester Ship Canal.

Photo by R. Banks. *Manchester.*

TRAFFORD WHARF, MANCHESTER.

Photo by R. Banks. *Manchester.*

SALFORD DOCKS.

Photo by R. Banks. *Manchester.*

OLD BARTON AQUEDUCT.

	£
Construction of Works (including Plant and Equipment) ...	10,730,926
Bridgewater Canals	1,268,089
Land (Purchase and Compensation)	1,484,794
Engineering and Surveying	184,324
Interest on Share and Loan Capital	1,170,734
Parliamentary Expenses	189,483
General Expenses	419,702
Interest on Debentures discharged by the issue of a like amount of Preference Stock to the Corporation of Manchester	988,255
	£16,436,307

There can be no doubt whatever that the opening of the port and the consequent cheapening of transit to and from the sea has given new life to the trade of Manchester and the densely-populated district of which it is the centre—the influence of the Canal for good upon the trade of Manchester and Lancashire is unquestionable. Manchester is the great distributing centre for the industrial products of Lancashire.

The expansion of Manchester Post Office work, the increase of the revenue of the Water Department and of the Gas and Electricity Departments have been very remarkable.

One of the most striking results of the establishment of the Port has been the development of the Trafford Park Estates adjoining the Manchester Docks, where large industrial establishments have been and are being erected.

The following table gives the total tonnage in traffic and the total Revenue since the opening of the Canal in 1894:—

		Tons		£
1894	.....	925,659	.....	97,901
1895	.....	1,358,875	.....	137,474
1896	.....	1,826,237	.....	182,330
1897	.....	2,065,815	.....	204,664
1898	.....	2,595,585	.....	236,225
1899	.....	2,778,108	.....	264,775
1900	.....	3,060,516	.....	290,830
1901	.....	2,942,393	.....	309,517
1902	.....	3,418,059	.....	358,491
1903	.....	3,846,895	.....	397,026
1904	.....	3,917,578	.....	418,043
1905	.....	4,253,354	.....	449,436
1906	(to June 30th)	2,243,136	.....	233,176

The collecting and distributing area served by the Canal, for which Manchester is the nearest Port, covers upwards of 10,000 square miles, and contains a population of upwards of 10,500,000 people.

CHAPTER XV.

THE CATHEDRAL AND CHURCHES OF MANCHESTER.

By the Rev. Hy. A. HUDSON, M.A.

LANCASHIRE was formerly famous rather for the extent of its parishes than for the number or beauty of its churches. Old Fuller remarked that "clergymen who consulted God's honour with their own credit could not better desire for themselves than to have a Lincolnshire church as best built, a Lancashire parish as largest bounded, and a London audience as consisting of most intelligent people." But times have changed, churches have been built which will vie with the fanes of Lincolnshire for stability and beauty; London has no monopoly of intelligence; whilst Lancashire parishes, divided and sub-divided, are now as a rule big only in population, and churches are studded thickly over the county.

In Domesday Book it is recorded that the parish of Manchester, which then contained 52,765 acres, possessed two churches. At the present time there are more than a hundred. One of these, St. Mary's, was the precursor of the present mother church of the parish, now the Cathedral of the diocese. Round this church, long known and affectionately regarded as the "Old Church," gathered most of the historical associations of the town and neighbourhood. Speaking of Westminster Abbey, Dean Bradley once said that "what caused the Abbey to be so interesting to all who spoke our language was not the impressive beauty of the church, for that could be equalled by many

churches in the world, but the fact that from the first dawn of English history the Abbey had been connected with that history, and had twined itself round the hearts of the people as no other church had done." The "Old Church" of Manchester stands in a similar relation to local history and to the affections of Manchester people. For hundreds of years civic and social life have found religious sanctions within and around its walls. Here in their respective chantries met the town guilds of the Blessed Virgin and the holy name of Jesus. Here were performed the miracle plays fondly loved by our forefathers. Here, too, for a period, men sought and found sanctuary when fleeing from their pursuers, Manchester being "one of the seven of all the Cathedralls, Collegiate Parish Churches, Hospitals or Chapells which were allowed and taken to bee places of priviledge and tuition for terme of life, for all and singular offendors and malefactors." Hither, in 1846, resorted the Mayor and Corporation of the recently-incorporated borough, occupying for the first time the official seats at the west end provided for them by the churchwardens; and the annual visit in civic state, commonly spoken of as the "Churching of the Lord Mayor," still draws the largest congregation of the year within its hallowed walls.

But that which chiefly serves to enshrine the church in the affection of the people is the large number of its baptisms and marriages. In this it exceeds almost every other church. The registry contains more than 360 volumes, many being of great bulk. In one year (1838) there were:

Baptisms	5,163
Marriages	2,615
Burials	1,457

and this is but a sample of many years until the division of the parish. The late Canon Wray recorded in his diary

that during the twenty-one years he served as Clerk in Orders and Chaplain before he was appointed Fellow, he personally officiated at—

Christenings	33,211
Weddings	13,196
Funerals	9,996

A visitor to the town in 1835 in some notes on the church expresses his astonishment, as well he might, when he heard the banns published on the Sunday he attended service—" For the first time of asking, sixty-five; for the second time, seventy-two; for the third time, sixty; total, one hundred and ninety-seven!" The present writer remembers baptizing a child, born in the United States, whose baptism had been delayed three years in order that he might be christened in the " Old Church."

It is not surprising, remembering these things, that the tie of association is strong, and it was largely due to this feeling that the project to build a new Cathedral on a new site fell through thirty-two years ago, in spite of the efforts of influential men and the approval of the Bishop.

Architecturally the building is shorn of much of its former interest owing to frequent renovation. An excellent type of a Collegiate Church and once possessing an almost unique series of lateral chapels separated from the main body by walls and screens, it is now opened out to its utmost extent in order to accommodate the large congregations which from time to time assemble here. The Nave, in truth, is a new erection rebuilt for the most part stone for stone in imitation of the original. Save for the richly carved roof and the rugged Tower Arch, which tells a tale of Waterloo year, when the whole of the Nave was coated with cement and generally "repaired" at a cost of £20,000, there is nothing of the real old church left west of the

choir, and regrets are vain. The roof, however, with its excellent "angel-choir" supporting the cross beams, is well worthy of examination, and forms a fitting prelude to the exquisite wood carving of the choir. The stalls are widely known for their beauty, and in a certain sense are unique. No series that the writer is acquainted with has so complete a cornice, and the effect of the original parclose screens continuing the cornice line must have been striking in the extreme before the introduction of the iron grilles and the ogee arches above. The screens throughout the church, and notably the Lady Chapel screen which is of rare beauty, deserve careful study, and it will be of interest to notice the *rebus* of Warden Huntingdon inserted beneath the terminals of the arch above. These sculptures, (1) a man with a dog *hunting*, and (2) the hunter refreshing himself at the wine *tuns*, reproduce with a certain lack of expression originals carved in wood in the spandrels of the beam against the east wall of the Choir Arch. There are few monuments of note, but the cenotaph with recumbent effigy of Bishop Fraser, and the statue, by Theed, of Humphrey Chetham, founder of the Blue Coat Hospital and Library which bear his name, are excellent modern works. It is to be regretted that no memorial, save the church itself, perpetuates the memory of Thomas de la Warre, founder of the College and one of the greatest of Manchester's many benefactors; nor is it creditable to local taste that the monument of the first warden and builder of the choir—a beautiful brass set in marble—should have been hidden for more than a hundred and fifty years in an inaccessible vault; whilst the tomb of Bishop Stanley (d. 1515), to whose influence much of the beauty of the church is due, has also been despoiled of its adornments and its brass mutilated. Happily steps are now being taken to restore the brass of Warden Huntington

to its former position before the high altar, where a memorial brass to the late Dean, the Very Reverend E. C. Maclure, D.D., is also about to be placed. Several other brasses—one a palimpsest—are now in the Chapter House, where may also be seen some fragments, the only portions remaining, of the original glass which formerly adorned the church. The Cathedral possesses a peal of ten bells, by Rudhall, most of them cast in 1706. It is also rich in post-Reformation Communion plate. Of the two organs, that in the North Choir Aisle is by Father Smith, and dates from 1682; whilst the great organ on the Screen, the gift of Sir William Houldsworth, Bart., is by Hill, of London.

The exterior, including the Tower, is all new work of the last fifty years, saving only the Lady Chapel. The west porch together with the new library and vestries, all by Champneys, are the latest additions. These latter, situated on the south side in the newly laid-out churchyard, form a quadrangle, and are connected with the main building by a cloister.

Visitors should on no account omit the Collegiate Buildings, north of the Cathedral, now occupied by Chetham's Hospital and Library. Here formerly resided the collegiate clergy, who not only served the church hard by, but ministered in several chapels of ease which, until the division of the parish, served for outlying townships. One of these, Denton, is a mediæval half-timbered edifice. Another, Didsbury, dates from early times; but with these exceptions the churches of Manchester are all of post-Reformation character and with certain exceptions are not remarkable architecturally.

After the "Old Church," the next both in priority of time and historic interest is St. Ann's. An earlier church,

it is true, existed near at hand in the borough of Salford, founded in 1635 by Humphrey Booth and dedicated to the Sacred Trinity, but in Manchester the erection of St. Ann's (1709-12) marked a new era both in the ecclesiastical and commercial development of the town. Defoe in his "Tour," published in 1727, described Manchester as "one of the greatest, if not really the greatest, mere village in England!" But he noted it was extending in a surprising manner, and likened its expansion to that of Liverpool and Frome! It was to meet the needs of this growing population that St. Ann's was built. But it served another purpose. Its name not only commemorated the reigning Queen, but it reminds us of the munificent Dame Ann Bland, heiress of the Mosleys and lady of the manor of Manchester. A woman of amiable and religious character, and withal a leader of local fashion, she inherited from her parents, and especially from her mother, Low Church and Presbyterian tendencies. Her political views were equally pronounced. Hence it is not surprising that the "New Church," as St. Ann's was called, became the rallying place of the local Hanoverians, to whom the High Church Jacobite influences of the "Old Church" were distasteful. How acute in course of time the rivalry became is well described by Dr. Halley:—"The people were as zealous for their respective parties as were their teachers. Ladies in plaid petticoats, and gentlemen in plaid waistcoats, representing Stuart preferences, frequented the Collegiate Church, except when the warden preached; whilst other ladies with orange ribands, and other gentlemen with orange handkerchiefs, worshipped in St. Ann's or in the Cross Street Meeting-house. In the Collegiate Church, when the prayer for King George was mumbled over, the people rose from their knees. In St. Ann's that prayer was repeated with especial emphasis and favour. Such

Photo by F. Ireland. *Manchester.*

MANCHESTER CATHEDRAL.

Photo by F. Ireland. *Manchester.*

Interior of the Manchester Cathedral.

Photo by F. Ireland.

INTERIOR OF ST. ANN'S, MANCHESTER.

Manchester.

Photo by F. Ireland. *Manchester.*

Interior of St. Alban's, Cheetwood.

was the religious life of Manchester in the early part of the last century."

The early years of St. Ann's provide one of the most intensely interesting chapters of local history. With the accession of King George III., however, a better feeling arose. Henceforward the exciting political associations of the church gave way to more settled religious activity, which, under the ministrations of a number of distinguished rectors, has made St. Ann's both well known and highly regarded. Architecturally it is a good example of Italian Renaissance. The tower formerly had a cupola, taken down in 1777, and later a spire, which has also been removed. During the years 1886–91 the interior was restored and rearranged under the direction of Mr. Alfred Waterhouse, R.A., and several stained windows designed by Mr. Fred. Shields have been inserted. St. Ann's is much resorted to at special seasons for sermons and lectures, and as a centre of religious influence in the city it deservedly occupies a high place. In its graveyard lies buried Thomas Quincey, father of Thomas De Quincey, the renowned *litterateur* and opium-eater, who was himself baptized at St. Ann's.

Two other city churches merit special notice—St. John's, Deansgate, and St. Peter's, Mosley Street. The former, founded by Edward Byrom and consecrated in 1769, is a curious example of revived Gothic style, containing stained-glass windows of the period by Wm. Peckett, of York, and some examples of Late Mediæval French glass. Concerning this latter, it is related that a refugee priest in the Revolution of 1793 was befriended by the Rector of St. John's, the Rev. John Clowes. On his return to Rouen the priest, having to restore his church, found that some of the glass could be spared, and he accordingly sent it to his friend in Manchester. There are also memorial

windows to John Owens, founder of Owens College, and others, some good sculptures by Flaxman and Westmacott, and several pictures of interest in the vestry.

St. Peter's, designed by Wyatt and completed in 1794, hitherto one of the most conspicuous of the city churches, has just been demolished. Once the resort, on account of its musical performances, of all the fashionable idlers of the town, and later the scene of the musical labours of the skilled and distinguished Dr. Joule, its glory has departed, and the parish is now united with the adjoining parish of St. James, in George Street. A generation ago its organ was regarded as the finest church organ in the North, and most of the *virtuosi* of the time played upon it. The instrument filled the west transept, and opposite, in the east transept, was the sanctuary with an altar-piece, "The Descent from the Cross," attributed to Annibal Caracci. The organ has happily been acquired by the suburban parish of St. Bride, Old Trafford.

Of the larger churches built in the early part of the nineteenth century, some of which were assisted by the "million grant," the most notable are St. Matthew's, near the site of the Roman camp, with a beautiful spire by Sir Charles Barry, and St. George's, Hulme, which contains a fine organ by Renn.

Coming to the real Gothic revival Holy Trinity, Stretford Road, by Scott (afterwards Sir Gilbert Scott) and Moffatt, consecrated 1843, is the best of the earlier examples. It was built and endowed at the sole expense of Miss Eleanora Atherton, granddaughter of Edward Byrom, founder of St. John's, Deansgate, and is remarkable both for the dignity of its exterior and the purity of its mouldings. The church possesses one of the best organs in the city and a good peal of eight bells.

Several fine churches were erected in the latter half of

the nineteenth century, chief amongst them being a group designed by the late Mr. Crowther, a local architect of refined and cultivated taste. The earliest, and in some respects the most important, of the group is St. Mary's, Hulme, consecrated in 1858. Judged as a pure revival of a fully-developed parish church of the Geometric Decorated period, it would be difficult to find a more perfect example. The church is well set on a site sufficiently spacious to display its parts, all of which are justly proportioned to each other, and dominated by a spire which for grace and elegance will compare with some of the best mediæval spires. The *tout ensemble* of the exterior is altogether admirable. The interior, with its lofty arcade, its spacious aisles (which on both sides are continuous throughout the length of the church), its window tracery, its great east window reaching down almost to the altar, and the beautiful roof, presents a structural harmony too seldom met with. The dimensions are worth recording:—

Length of nave	84½	feet.
Width of nave	62	,,
Length of choir	50	,,
Height of nave roof	72	,,
Height of spire	260	,,

Two other fine interiors by Mr. Crowther are St. Alban's, Cheetwood, formerly the scene of Canon Knox-Little's labours, and St. Benedict's, Ardwick, renowned in the North for the elaborate music and ceremonial of its services. St. Mary's, Crumpsall, is another of Mr. Crowther's works; and it may be mentioned that Mr. Crowther was also the architect of the last Cathedral restorations dating from 1882.

Of the more original churches of the ancient parish and district three deserve special mention. One of these, St.

Paul's, Oldham Road, by Mr. Oldrid Scott, is easily accessible. It is built on a somewhat restricted site, cleverly planned, and possesses a fine steeple. The other two—St. Elisabeth's, Reddish, by Mr. Alfred Waterhouse, R.A., and St. Augustine's, Pendlebury, by Messrs. Bodley & Garner are at some distance, and are both brick churches.

St. Elisabeth's, built at the cost of Sir Wm. Houldsworth, Bart., is singular in its adaption of foreign elements to English purposes and form. At one moment it suggests Lombardic and Venetian influences, at another German Romanesque. The Church will well repay a visit, being full of original detail, excellently wrought, with a stately alabaster screen, and a fine series of windows, designed by Mr. F. J. Shields to illustrate the "Triumph of Faith," (Heb. xi.) in the nave. The apses, too, contain good glass by C. E. Kempe and F. C. Eden.

Quite the most remarkable, however, of all the local churches is St. Augustine's Pendlebury, founded by Mr. E. S. Heywood. (Reached by train from Victoria Station, or tramcar from Deansgate.) Externally severe, it stands strong and stately in an ample precinct entered through a postern in a gatehouse of mediæval character. Built in the transitional decorated style without tower, spire, or transept, and with shallow buttresses, the exterior effect is gained by subtle proportioning of the general mass, by reserve of decorative treatment, and by the fine range of windows which encircle the church at a fixed level. The east façade is a striking composition, the commanding feature of which is the great window. This is set in mural tracery, emphasised by niches containing statues of the four Latin Doctors, and flanked by buttresses with admirable pinnacles. Notice will be taken of the converging walls of the easternmost bay, due to the termination of passage aisles in the interior buttresses.

The west front, similar in treatment, though plainer than the east front, is equally characteristic. Over the portal is a figure of St. Augustine of Canterbury, holding an embroidered banner with a representation of the Crucifixion. The south-west porch contains three statues, the centre one being that of the Saviour, whilst right and left are St. Giles with the stag and St. Paulinus, Apostle of Lancashire. On entering the church the visitor is struck by the remarkable impressiveness of the interior, due partly to the length (150 feet) and height (61 feet) of the church, partly to the rich screenwork and panelling of dark oak and the magnificent glass by Messrs. Burlison and Grylls. A perfect harmony of colour decoration pervades the whole. Walls, roof, hangings, furniture, all express a mind imbued with the spirit of the best mediæval English Art and capable of translating it with original force into living form to-day. We have not space to dwell on the details of this sumptuous interior. It must suffice to direct attention, firstly, to the originality of the inside buttresses, which are pierced for passages and produce a mystery of effect which the writer has only experienced in one other church—the Cathedral at Freiburg, in Saxony; and, secondly, to the elaborate series of painted windows. On the north side of the nave the glass is devoted to Old Testament subjects. The windows on the south contain principally kings and warriors, martyrs and missionaries, conspicuous amongst them being saints of the early and mediæval churches of the West. Over the west door is a "Jesse" window; the great east window contains figures of our Lord in glory, with the four Doctors, four female Saints, St. Augustine, St. George, St. Edward the Confessor, the Deacons, St. Stephen and St. Lawrence, together with St. Anselm and St. Paulinus. In the other choir windows are Apostles, Evangelists, Prophets, Northumbrian Missionaries and others.

Judged as a whole the church is a masterpiece. There is no jarring note within or without. Form, colour and proportion admirably assist each other throughout, and it may fairly be said that, " taken as a complete ecclesiastical structure, beautiful, dignified and aiding feelings of devotion, St. Augustine's has few modern rivals."

These notes, necessarily brief, will, it is hoped, suffice to show that the churches of Manchester have grown with the growth of the parish, and possess historical and architectural features both interesting and noteworthy.

CHAPTER XVI.

THE AMUSEMENTS OF MANCHESTER.

By ROBERT COURTNEIDGE *(with additions).*

Whilst disagreeing emphatically from Froissart's dictum that the English take their pleasures sadly, we must admit that a very conservative spirit is evinced by the people of Merrie England in the selection of their entertainment. The embroidery varies, the substance never. Innovation, except in superficial detail, is positively resented by the average Englishman. Give him the amusements with whose conventions he has always been familiar, and he is satisfied; depart from these conventions, and he looks askance and with distrust at the unknown new thing. Age cannot wither nor custom stale the diversions to which he is accustomed, and only age can legitimatize new forms.

No other explanation would account for the lack of variety in the entertainments of so considerable a city as Manchester. It might reasonably be thought that in this city of dreadful rain, this soot-laden, bricky wilderness, sheer necessity would prompt men's minds to the devising of new methods of recreation. There is scarcely a city in the world could claim with more propriety to prompt the world's merry-making, for here is intelligence as well as industry. Manchester is not only a teeming workshop, but a centre of culture; its masses toil strenuously, but its classes are destitute neither of leisure, taste nor means. Would not one think that these, in their hours of ease, would devote their proved ingenuity and energy to experiments in the contrivance of pleasure which should brighten our depressing, work-a-day aspect?

But alas! not only is civic inception disappointingly

lacking, except as regards bands in the public parks, but encouragement is neither eager nor enthusiastic for the pioneers who venture from the beaten track. What has been, still must be. The plain, customary solid roasts and boileds are preferred to your tentative kickshaws; hence the classification of Manchester's amusements need occupy but little thought or space.

Our "places of entertainment" comprise some dozen or so of central and suburban theatres, eight music halls, two large halls devoted to concerts, lectures, and miscellaneous entertainments, the White City, where open-air bands encourage summer promenades, and a popular Zoological Gardens (known as Belle Vue) where the democratic zest in natural history is pleasantly diversified with not too light, but sometimes very fantastic, indulgence in the pleasures of the dance.

The national games of cricket and football are, of course, largely pursued; and amongst the most popular places of resort must be counted the County Cricket Ground at Old Trafford, where on a fine summer's day as many as twenty thousand spectators may be found watching the game. In winter enormous crowds assemble to watch the football contests at the City football ground in Hyde Road and the ground of the United Football Club at Clayton. Even larger attendances are obtained at the Manchester Racecourse, for Manchester is distinctively and prominently identified with that form of entertainment, which its enthusiastic devotees call the sport of kings, but which is noticeably pursued in some instances by others also. During recent years so many golf clubs have been established that the city is now encircled by their courses. It should be remembered that the "Old" Manchester Club has been in existence for close upon a century.

A prouder distinction belongs to Manchester as a recognized musical centre. The organization founded by Sir Charles Halle continues to provide high-class concerts during the winter under the worthy direction of Herr Richter, and other musical entertainments of excellent

class are provided from time to time in the Free Trade Hall and other rooms of public assembly.

The Theatre Royal is acknowledged to be one of the finest play houses in the United Kingdom. Although the science of theatrical architecture has greatly advanced of late years, it is very questionable whether any of the elegant structures of recent years can stand comparison with the well-known house in Peter Street. There is a stateliness and dignity about the Royal which appeals alike to the player and playgoer; which enshrines it firmly in the affections of both. The auditorium is handsomely appointed, and though large, yet enables every spectator to see and hear distinctly. The stage is one of the most spacious in the country, and admirably adapted to show to advantage spectacular drama, grand opera, or pantomime. Built by the late John Knowles, and opened in 1845, it has a history of more than ordinary interest. Every theatrical celebrity of the last half-century has trod its boards, and most of the well-graced players of a past day have received their training and earliest encouragement within its walls. Perhaps its proudest tradition is the fact that Sir Henry Irving first came into prominence during a long engagement in a stock company here, during which he gathered round him a host of devoted friends and admirers whose confident prophesies of his future greatness have since been largely fulfilled. But it is not within the province or compass of this paper to attempt a history of all the famous names connected with this well-known play house. Around it still linger agreeable memories of notable times and prominent actors only waiting the sympathetic historian to interest all who have any kindly feeling for the dramatic annals of the city of Manchester.

The Prince's Theatre, which opened its doors upon October 15th, 1864, with the performance of "The Tempest," rapidly achieved a more than local celebrity from the artistic labour of Charles Calvert, who presented a succession of Shakespeare's plays with a scholarly taste and magnificence that captured the public imagination

and made his name famous in the records of the English stage. The Prince's has also achieved a distinction for pantomime and light opera, many of the most prominent burlesque artistes having appeared in the annual productions at this house. The auditorium is one of the daintiest in the country, and if the Royal may be taken as a model of what a large theatre should be, the Prince's may lay equal claim to be regarded as a perfect type of that in which pantomime, light opera, and farce is the staple fare. The decorative scheme includes a very fine fresco over the proscenium, by the late H. Stacey Marks, upon the subject of "The Seven Ages," which will amply repay inspection.

The Queen's Theatre, in Bridge Street, has long been recognised as the home of Melodrama in Manchester. It is essentially the "popular" theatre of Manchester. Under the excellent and spirited management of Mr. Richard Flanagan it has added a second distinction to its honourable record by the annual production of a Shakespearean play, richly mounted and admirably acted.

The Gaiety Theatre (formerly the "Comedy") is the smallest of the central Manchester houses, and bears an especially excellent record for its remarkably successful series of pantomimes.

A recent addition to the theatres is that which has been provided in the Midland Grand Hotel.

These constitute the principal theatres in Manchester. It can no longer be said that the most notable local efforts are reserved for the annual pantomime, which used to be the great event of the theatrical year in Lancashire. At the Queen's Theatre, as already indicated, a Shakespearean production is given instead of the lighter fare which obtains at the other theatres. During the rest of the year the theatrical entertainments are provided by touring companies, amongst which, in the autumn, are included the troupes of the leading London Theatres. In the outlying theatres melodrama is the usual bill of fare, varied at Christmas time by visits from travelling pantomime companies.

Though the Palace Theatre of Varieties has been established for some years it was not till the opening of the splendidly-equipped Hippodrome and the Empire Music Halls that the class of entertainment provided in those houses attained its present popularity.

A detailed list of the places of amusement in Manchester and Salford is appended: —

1. The Theatre Royal.
2. Prince's Theatre.
3. Gaiety Theatre.
4. Queen's Theatre.
5. St. James's Theatre.
6. Midland Hotel Theatre.
7. Palace Theatre of Varieties.
8. Hippodrome, Oxford Street.
9. Empire, Ardwick Green.
10. Tivoli Theatre of Varieties.
11. Grand Theatre of Varieties.
12. The Free Trade Hall.
13. St. James's Hall.
14. Y.M.C.A. (Association Hall).
15. Osborne Theatre, Oldham Road.
16. Metropole Theatre, Openshaw.
17. Grand Junction Theatre, Hulme.
18. Regent Theatre, Salford (Music Hall).
19. Victoria Theatre, Broughton.
20. Prince of Wales's Theatre, Salford.
21. Queen's Park Hippodrome.
22. Salford Hippodrome.
23. Lyceum Theatre, Eccles.
24. The White City.
25. Belle Vue Gardens.

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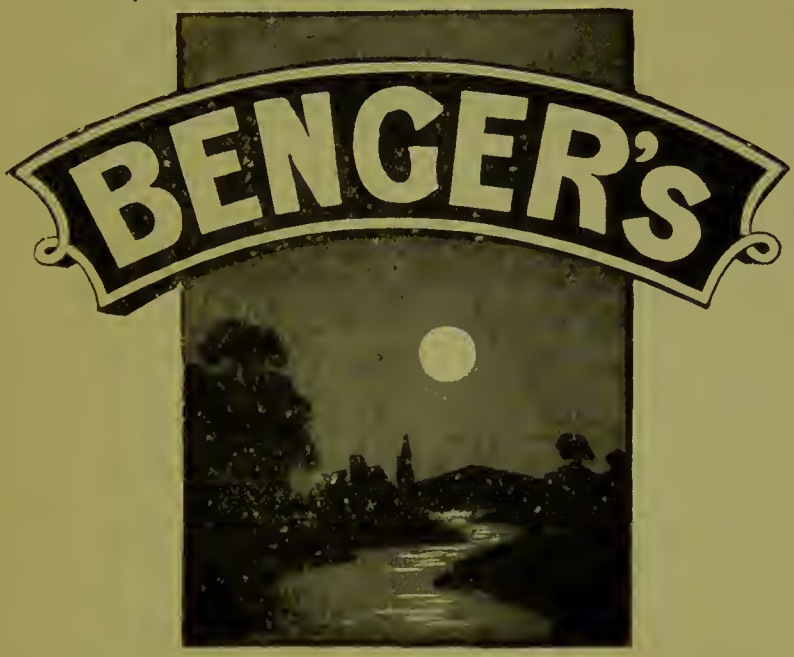

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